JVC

# SERVICE MANUAL

## VIDEO CASSETTE RECORDER

# HR-V525SEF

Area Suffix
EF -------- French Republic

Hi-Fi

VHS
PAL SECAM

HR-V525SEF [V18D1]

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# SPECIFICATION

| HR-V525SEF | | |
|---|---|---|
| **General Specifications** | | |
| Television system | | SECAM L,L',PALB/G<br>TV standard |
| Video heads | | Four-video and Two-audio heads<br>helical scan system |
| Tape width | | 12.65mm |
| Tape speed | | SP :23.39 mm/sec.<br>LP:11.70 mm/sec. |
| Tuner channel | [SECAM-L] | F1~F10<br>FB~FQ<br>E21~E69<br>CATV |
| | [PAL B/G] | E2~E12<br>E21~E69<br>A~H(Only Italy)<br>CATV |
| Timer indication | | 24-hour system |
| Operating temperature | | 5°C~40°C |
| Terminals | AERIAL | Coaxial type, female |
| | RF OUT | Coaxial type,male |
| | AUDIO/VIDEO | 21 pin scart socket x 2 |
| | VIDEO input | RCA connector x 1 |
| | AUDIO input/output | RCA connector x 4 |
| **Electrical Specifications** | | |
| Video output level | | 1Vp-p |
| Video output impedance | | 75Ω unbalanced |
| Audio output level | | -6dBv |
| Video input level | | 0.5~2.0Vp-p |
| Audio input level | | -10dBv |
| Video S/N ratio(STANDARD) | | 45dB |
| Audio S/N ratio (STANDARD) | | 41dB |
| **Other Specifications** | | |
| Power requirement | | 220-240V~50 Hz |
| Power consumption | | 25Watts |
| Dimensions | | W360mm<br>H92mm<br>D226mm |
| Weight | | 2.4kg(approx.) |

**Note**

- This VCR complies with HYPER and OSCAR frequency bands of the CATV.
- Designs and specifications are subject to change without notice.

# SECTION 1
# PRECAUTION

## 1.1 IMPORTANT SAFETY PRECAUTIONS

### 1.1.1 Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

### 1.1.2 Precautions during Servicing

(1) Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

(2) In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

(3) Use specified internal wiring. Note especially:
  a) Wires covered with PVC tubing
  b) Double insulated wires
  c) High voltage leads

(4) Use specified insulating materials for hazardous live parts. Note especially:
  a) Insulation tape
  b) PVC tubing
  c) Spacers
  d) Insulators for transistors

(5) When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

(6) Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

(7) Check that replaced wires do not contact sharp edges or pointed parts.

(8) When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

(9) Also check areas surrounding repaired locations.

(10) Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

(11) Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure
  a) Remove the old connector by cutting the wires at a point close to the connector.

  **Important: Do not re-use a connector. (Discard it.)**
  b) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
  c) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
  d) Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

(12) When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

### 1.1.3 Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

#### 1.1.3.1 Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig.1)

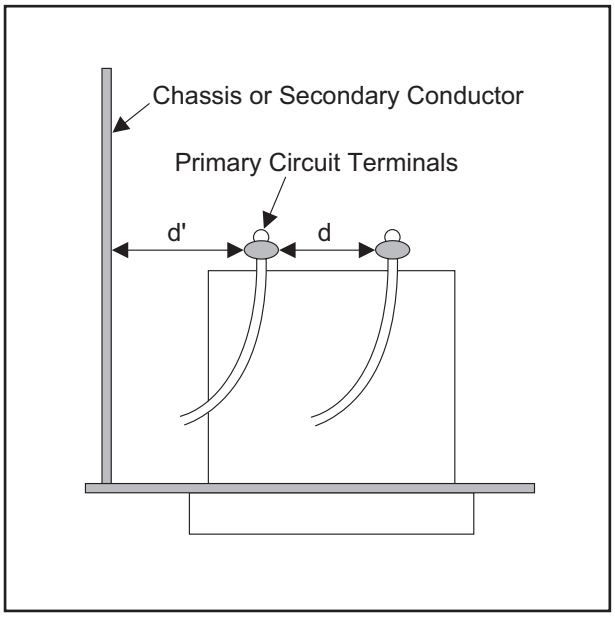



Fig.1

Table 1 : Ratings for selected area

| AC Line Voltage | Clearance Distance (d), (d') |
|---|---|
| 220 to 240 V | ≥ 3 mm(d)<br>≥ 6 mm(d') |

**Note:**

This table is unofficial and for reference only.
Be sure to confirm the precise values.

#### 1.1.3.2 Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

**Measuring Method (Power ON) :**

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

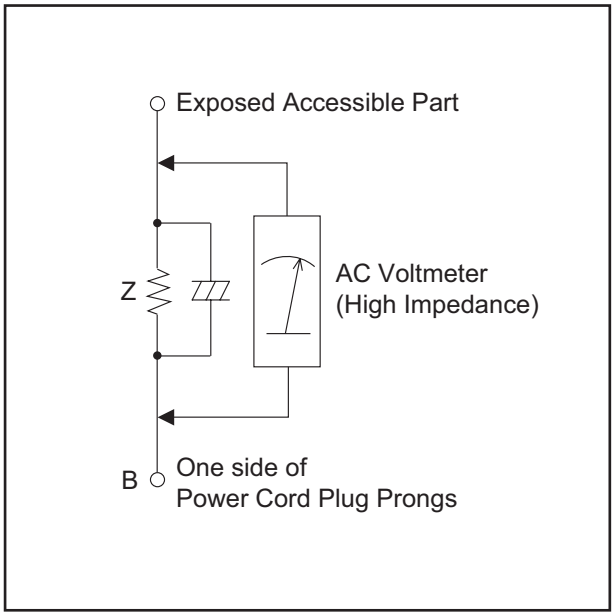



Fig.2

Table 2: Leakage current ratings for selected areas

| AC Line Voltage | Load Z | Leakage Current (i) | One side of power cord plug prongs (B) to: |
|---|---|---|---|
| 220 to 240 V | 2kΩ RES. Connected in parallel | i≤0.7mA AC Peak<br>i≤2mA DC | RF or Antenna terminals |
| | 50kΩ RES. Connected in parallel | i≤0.7mA AC Peak<br>i≤2mA DC | A/V Input, Output |

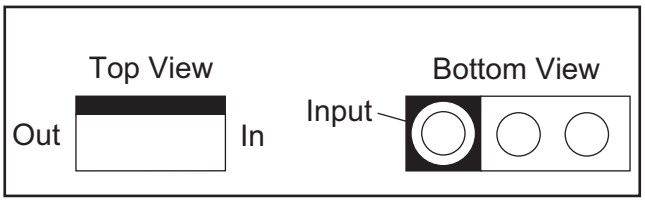
**Note:**

This table is unofficial and for reference only. Be sure to confirm the precise values.

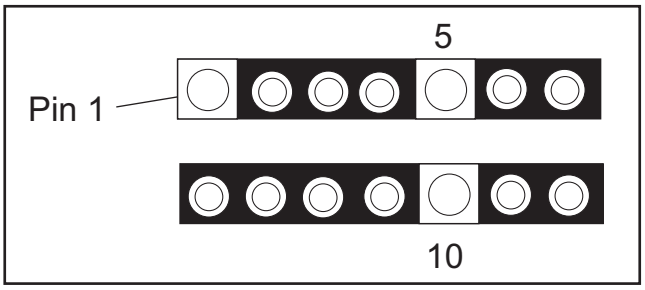
## 1.2 STANDARD NOTES FOR SERVICING

### 1.2.1 Circuit Board Indications

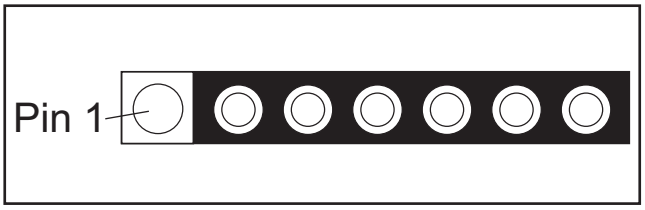
(1) The output pin of the 3 pin Regulator ICs is indicated as shown.




(2) For other ICs, pin 1 and every fifth pin are indicated as shown.




(3) The 1st pin of every male connector is indicated as shown.




### 1.2.2 Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

### 1.2.3 How to Remove / Install Flat Pack-IC

#### 1.2.3.1 Removal

##### 1.2.3.1.1 With Hot-Air Flat Pack-IC Desoldering Machine:.

(1) Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. 1)

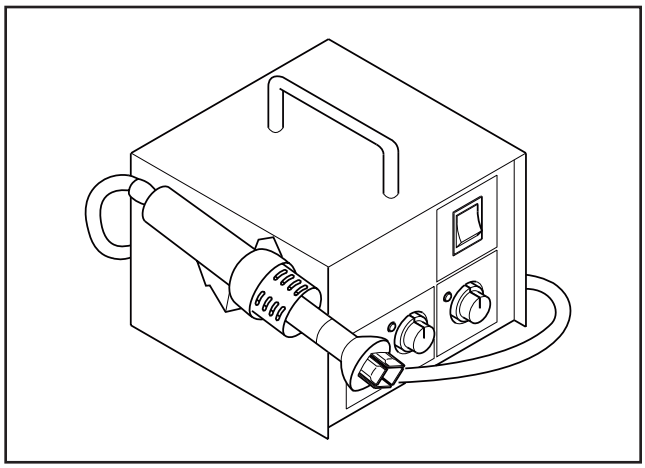


Fig.1

(2) Remove the flat pack-IC with tweezers while applying the hot air.

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. 6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. 6)

##### 1.2.3.1.2 Caution:

(1) The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.

(2) Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. 2)

(3) The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

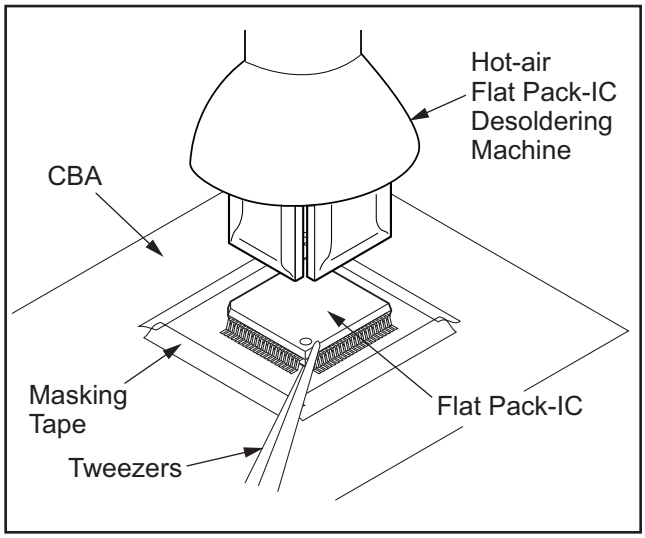



Fig.2

**1.2.3.1.3 With Soldering Iron:**

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. 3)

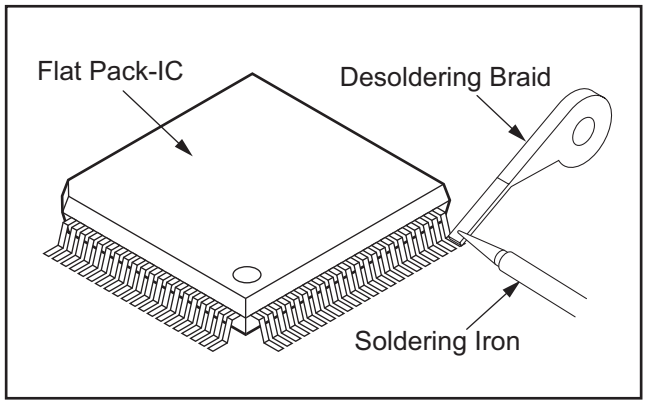



Fig.3

(2) Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. 4)

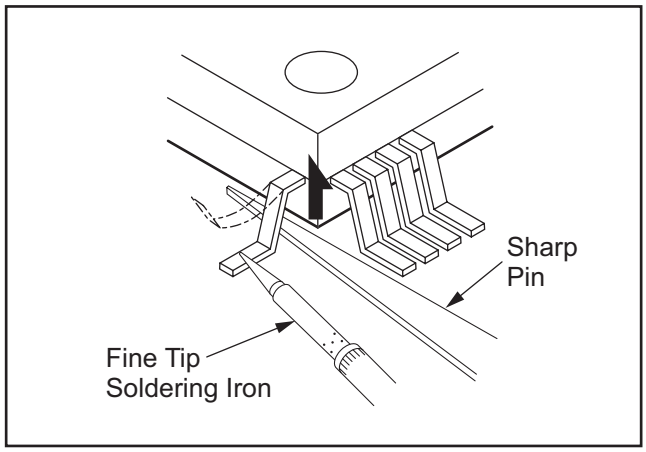



Fig.4

(3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. 6)

(4) Release the flat pack-IC from the CBA using tweezers. (Fig. 6)

**1.2.3.1.4 With Iron Wire:**

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. 3)

(2) Affix the wire to a workbench or solid mounting point, as shown in Fig. 5

(3) While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. 5

(4) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. 6)

(5) Release the flat pack-IC from the CBA using tweezers. (Fig. 6)

**Note:**

When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

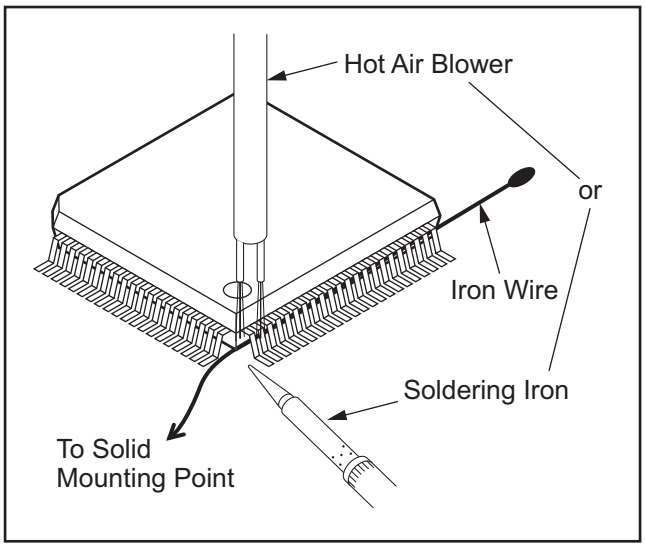



Fig.5

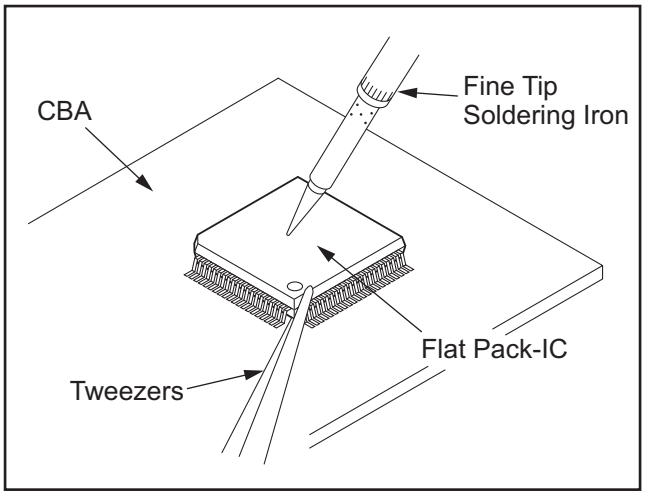



Fig.6

#### 1.2.3.2 Installation

(1) Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.

(2) The "●" mark on the flat pack-IC indicates pin 1. (See Fig. 7) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. 8)

(3) Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

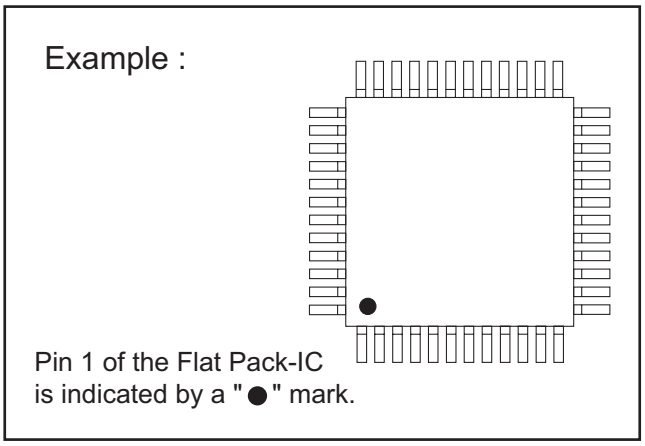



Fig.7

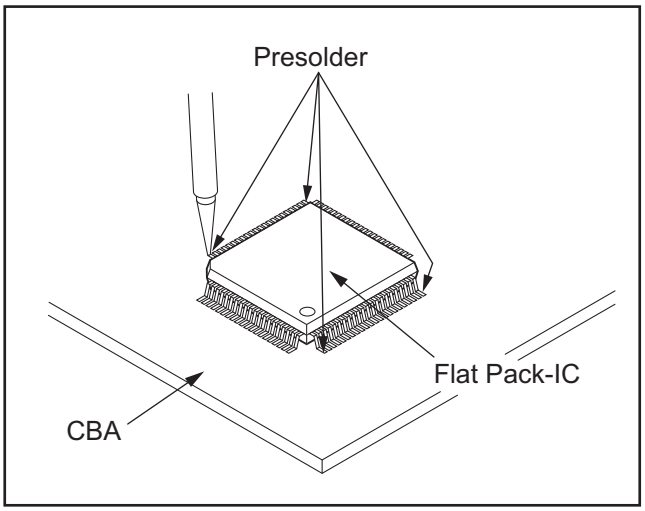



Fig.8

### 1.2.4 Instructions for Handling Semi-conductors

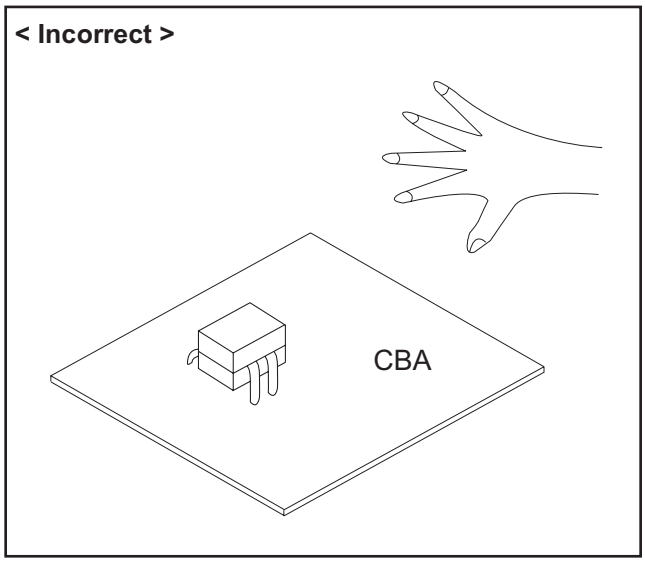
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

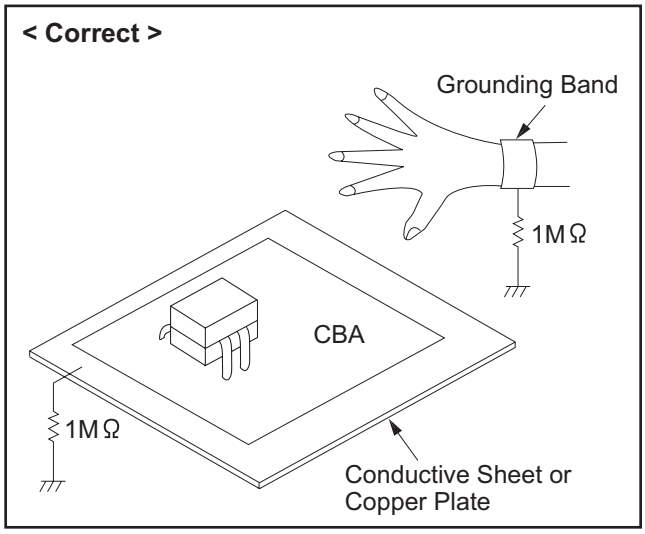
#### 1.2.4.1 Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

#### 1.2.4.2 Ground for Workbench

(1) Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.



## 1.3 PREPARATION FOR SERVICING

### 1.3.1 How to Enter the Service Mode

#### 1.3.1.1 About Optical Sensors

**Caution:**

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

**What to do for preparation**

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP507 (S-INH) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

**Note:**

Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

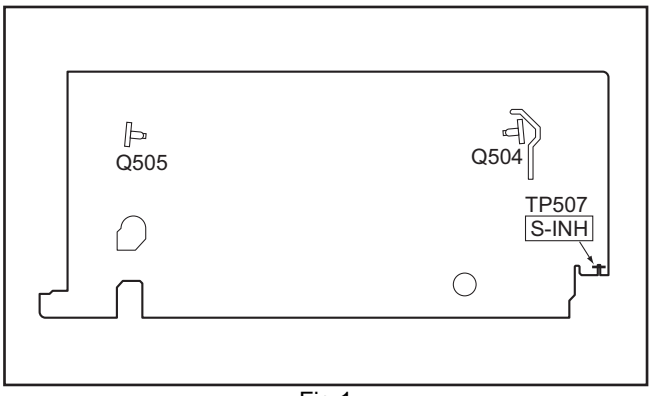



Fig.1

# SECTION 2
# SPECIFIC SERVICE INSTRUCTIONS

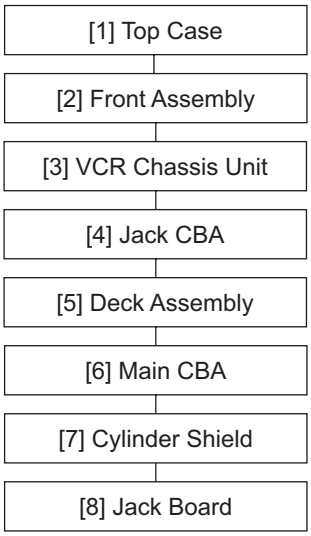
This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

# SECTION 3
# DISASSEMBLY

## 3.1 CABINET DISASSEMBLY INSTRUCTIONS

### 3.1.1 Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.




### 3.1.2 Disassembly Method

| ID/ Loc. No. | PART | REMOVAL | | |
|---|---|---|---|---|
| | | Fig. No. | REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | Note |
| [1] | Top Case | 1 | 7(S-1) | - |
| [2] | Front Assembly | 2 | 3(L-1),*4(L-2) | - |
| [3] | VCR Chassis Unit | 3 | 5(S-2), 3(S-3), (S-4) 1 | 1 |
| [4] | Jack CBA | 4 | Desolder, (S-5) | - |
| [5] | Deck Assembly | 5<br>6 | 2(S-6), Desolder | 2,3 |
| [6] | Main CBA | 5 | ---------- | - |
| [7] | Cylinder Shield | 5 | (S-7) | - |
| [8] | Jack Board | 5 | *(L-3) | - |
| ↓ (1) | ↓ (2) | ↓ (3) | ↓ (4) | ↓ (5) |

(1) Identification (location) No. of parts in the figures
(2) Name of the part
(3) Figure Number for reference
(4) Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P = Spring, L = Locking Tab, S = Screw,
CN = Connector
* = Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)
(5) Refer to "Reference Notes."

#### 3.1.2.1 Reference Notes

**CAUTION :**

Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

(1) Remove five Screws (S-2), three Screws (S-3) andScrew (S-4). Then, slowly lift the VCR Chassis Unit(Deck Assembly, Jack CBA and Main CBA) up.
(2) When reassembling, solder wire jumpers as shownin Fig. 5.
(3) Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. 6. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. 6.

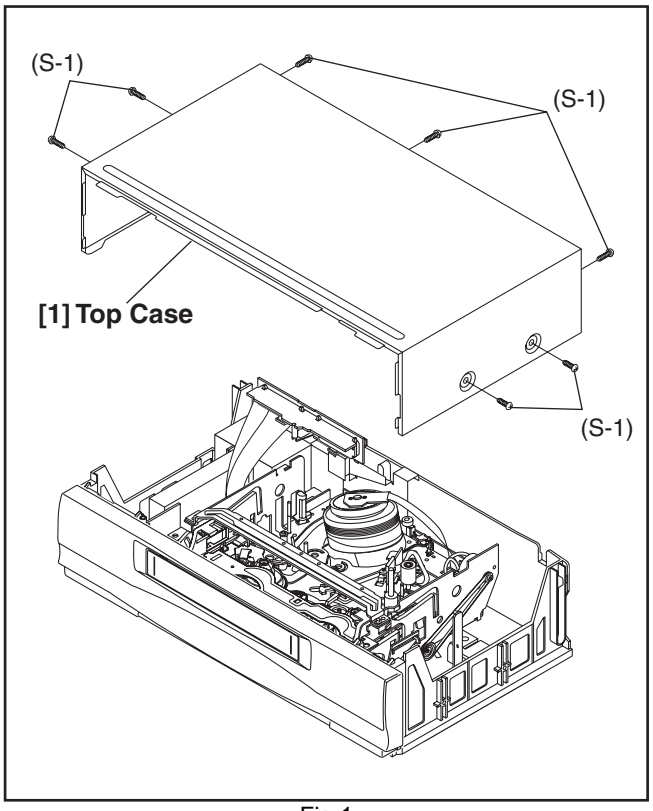



Fig.1

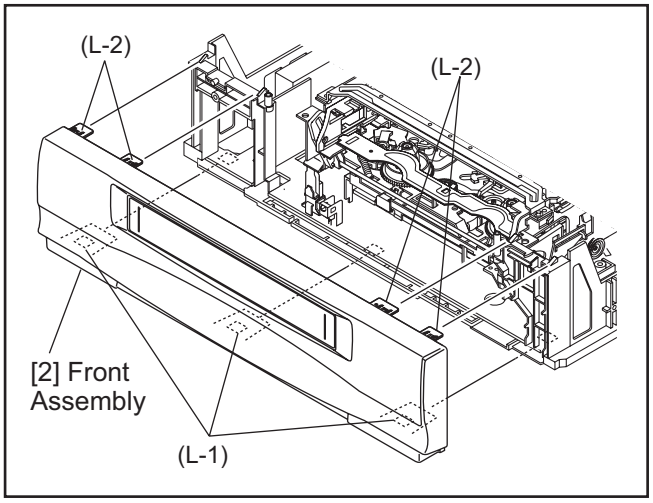



Fig.2

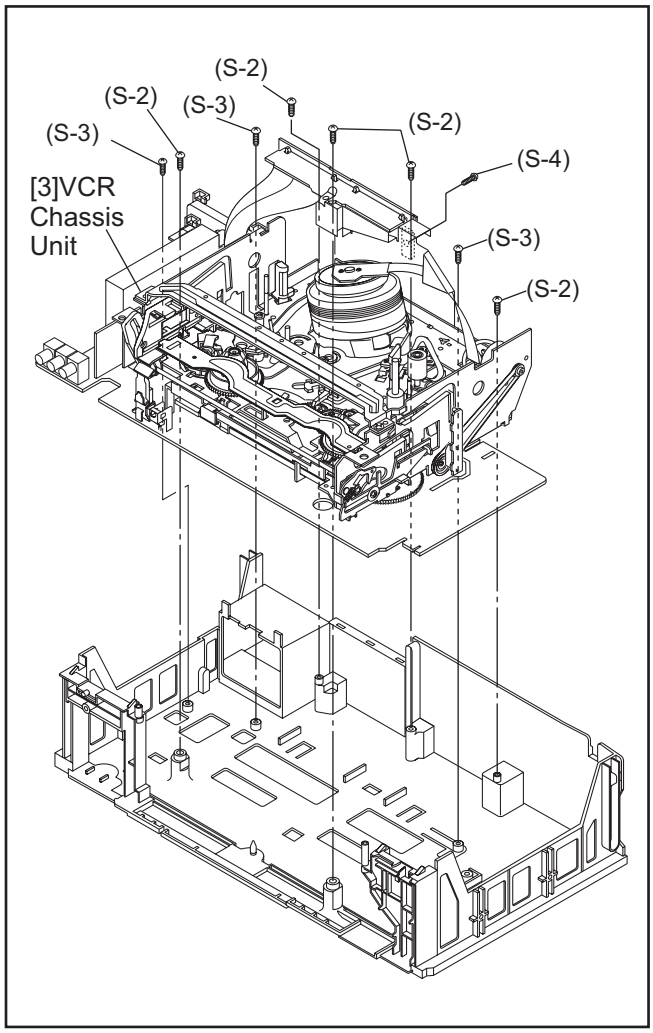



Fig.3

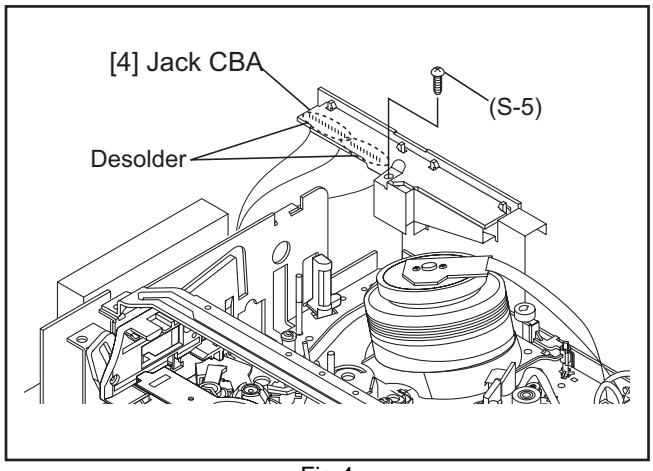



Fig.4

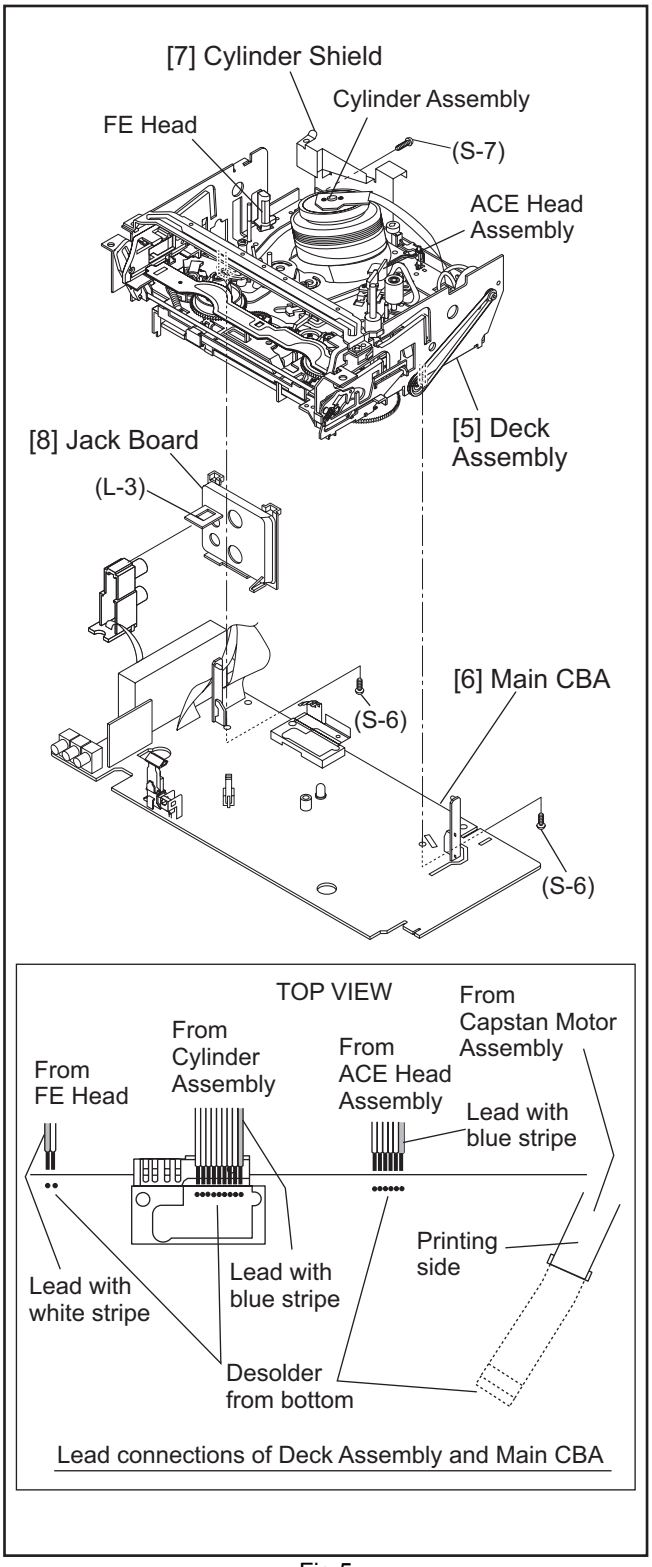

[7] Cylinder Shield
Cylinder Assembly
FE Head
(S-7)
ACE Head Assembly
[5] Deck Assembly
[8] Jack Board
(L-3)
[6] Main CBA
(S-6)
(S-6)
TOP VIEW
From Capstan Motor Assembly
From Cylinder Assembly
From ACE Head Assembly
From FE Head
Lead with blue stripe
Printing side
Lead with white stripe
Lead with blue stripe
Desolder from bottom
Lead connections of Deck Assembly and Main CBA

Fig.5

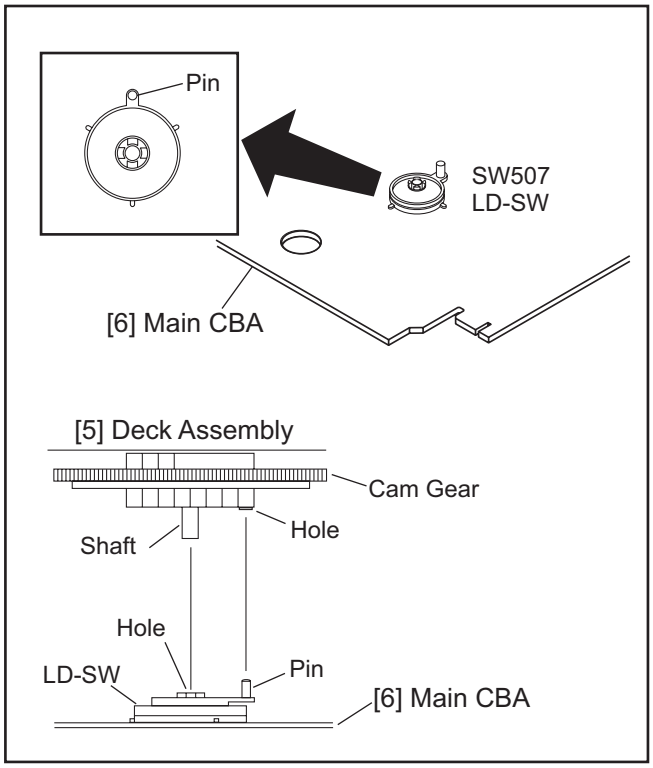

Pin
SW507
LD-SW
[6] Main CBA
[5] Deck Assembly
Cam Gear
Hole
Shaft
Hole
LD-SW
Pin
[6] Main CBA

Fig.6

### 3.2 DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [44] and [45] in Fig.1 DM1H on page 1-15. When reassembling, follow the steps in reverse order.

| STEP/ LOC. No. | STARTING No. | PART | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|
| | | | | Fig. No. | REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | ADJUSTMENT CONDITION |
| [1] | [1] | Guide Holder A | T | 3 | 2(S-1) | |
| [2] | [1] | Cassette Holder Assembly | T | 4 | | |
| [3] | [2] | Slider (SP) | T | 5 | (S-1A), *(L-1) | |
| [4] | [2] | Slider (TU) | T | 5 | *(L-2) | |
| [5] | [4] | Lock Lever | T | 5 | *(L-3), *(P-1) | |
| [6] | [2] | Cassette Plate | T | 5 | | |
| [7] | [7] | Cylinder Assembly | T | 1,6 | Desolder, 3(S-2) | |
| [8] | [8] | Loading Motor Assembly | T | 1,7 | Desolder, LDG Belt, 2(S-3) | |
| [9] | [9] | ACE Head Assembly | T | 1,7 | (S-4) | |
| [10] | [2] | Tape Guide Arm Assembly | T | 1,8 | *(P-2) | |
| [11] | [10] | C Door Opener | T | 1,8 | (S-4A), *(L-4) | |
| [12] | [11] | Pinch Arm (B) | T | 1,8,9 | *(P-3) | |
| [13] | [12] | Pinch Arm (A) Assembly | T | 1,8,9 | | |
| [14] | [14] | FE Head | T | 1,10 | (S-5) | |
| [15] | [15] | Prism | T | 1,10 | (S-6) | |
| [16] | [2] | Slider Shaft | T | 11 | *(L-5) | |
| [17] | [16] | C Drive Lever (SP) | T | 11 | | |
| [18] | [16] | C Drive Lever (TU) | T | 11 | (S-7), *(P-4) | |
| [19] | [19] | Capstan Motor | B | 2,12 | 3(S-8), Cap Belt | |
| [20] | [20] | Clutch Assembly (HI) | B | 2,13 | (C-1) | |
| [21] | [20] | Center Gear | B | 13 | | |
| *[22] | [22] | F Brake Assembly (HI) | B | 2,13 | *(L-6) | |
| [23] | [22] | Worm Holder | B | 2,14 | (S-9), *(L-7), *(L-8) | |
| [24] | [22] | Pulley Assembly (HI) | B | 2,14 | | |
| [25] | [25] | Mode Gear (LM) | B | 2,14 | (C-2) | |
| [26] | [20],[25] | Mode Lever (HI) | B | 2,14,15 | (C-3) | |
| [27] | [22],[23],[26] | Cam Gear (A) (HI) | B | 2,14,15 | (C-4) | (+)Refer to Alignment Sec.Page 1-33 |
| [28] | [26] | TR Gear C | B | 2,14 | (C-5) | |
| [29] | [28] | TR Gear Spring | B | 14 | | |
| [30] | [29] | TR Gear A/B | B | 14 | | |
| [31] | [31] | FF Arm (HI) | B | 1,16 | | |
| [32] | [26] | Idler Assembly (HI) | B | 1,16 | *(L-9) | |
| [33] | [26] | BT Arm | B | 2,16 | *(P-5) | |
| [34] | [26] | Loading Arm (SP)Assembly | B | 2,16 | | (+)Refer to Alignment Sec.Page 1-33 |
| [35] | [34] | Loading Arm (TU) Assembly | B | 2,16 | | (+)Refer to Alignment Sec.Page 1-33 |
| [36] | [16],[26] | M Brake (TU) Assembly (HI) | T | 1,17 | | |
| [37] | [2],[26] | M Brake (SP)Assembly (HI) | T | 1,17 | *(P-6) | |

| STEP/ LOC. No. | STARTING No. | PART | | REMOVAL | | INSTALLATION |
|---|---|---|---|---|---|---|
| | | | | Fig. No. | REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER | ADJUSTMENT CONDITION |
| [38] | [37] | Tension Lever Assembly | T | 1,17 | | |
| [39] | [38] | T Lever Holder | T | 17 | *(L-10) | |
| [40] | [40] | M Gear (HI) | T | 1,17 | (C-6) | |
| [41] | [15],[40] | Sensor Gear (HI) | T | 1,17 | (C-7) | |
| [42] | [36],[40] | Reel T | T | 1,17 | | |
| [43] | [38] | Reel S | T | 1,17 | | |
| [44] | [34],[38] | Moving Guide S Preparation | T | 1,18 | (S-11), Slide Plate | |
| [45] | [35] | Moving Guide T Preparation | T | 1,18 | | |
| [46] | [19] | TG Post Assembly | T | 1,18 | *(L-11) | |
| [47] | [27] | Rack Assembly | R | 19 | | (+)Refer to Alignment Sec.Page 1-33 |
| [48] | [47] | F Door Opener | R | 19 | | |
| [49] | [49] | Cleaner Assembly | T | 1,6 | | |
| [50] | [49] | CL Post | T | 6 | *(L-12) | |
| ↓ (1) | ↓ (2) | ↓ (3) | ↓ (4) | ↓ (5) | ↓ (6) | ↓ (7) |

(1) Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.
(2) Indicates the part to start disassembling with in order to disassemble the part in column (1).
(3) Name of the part
(4) Location of the part: T=Top B=Bottom R=Right L=Left
(5) Figure Number
(6) Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).
(7) Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

*** [ 22 ] F Brake Assembly (HI) is not used in 2 head model.**

## Top View

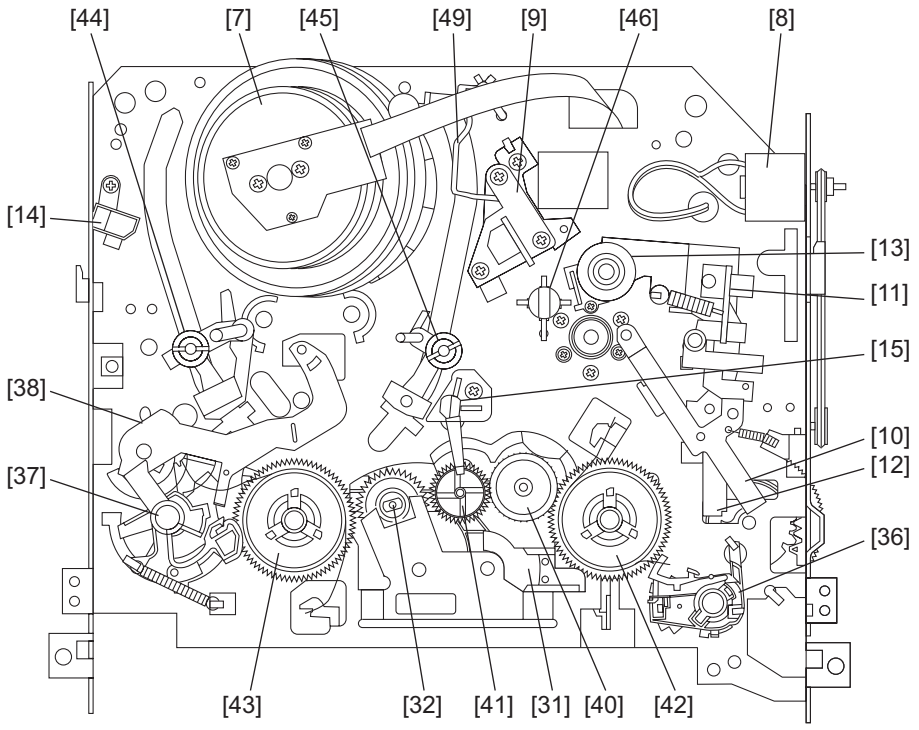



Fig.1

## Bottom View

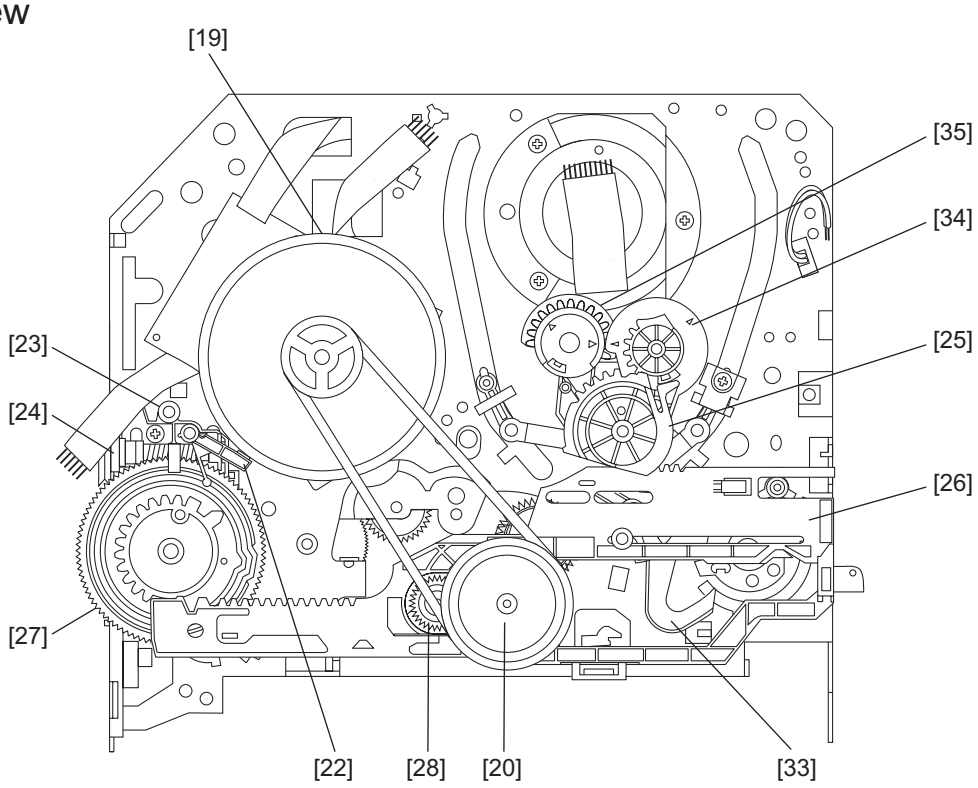



Fig.2

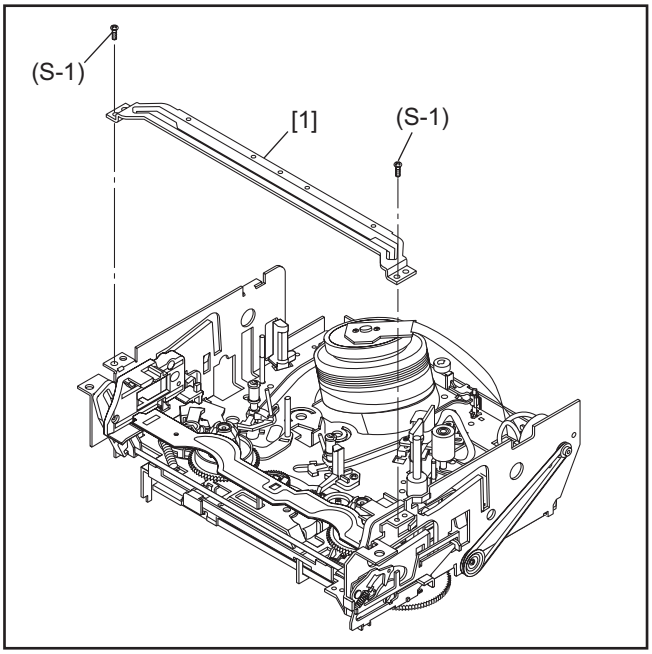



Fig.3

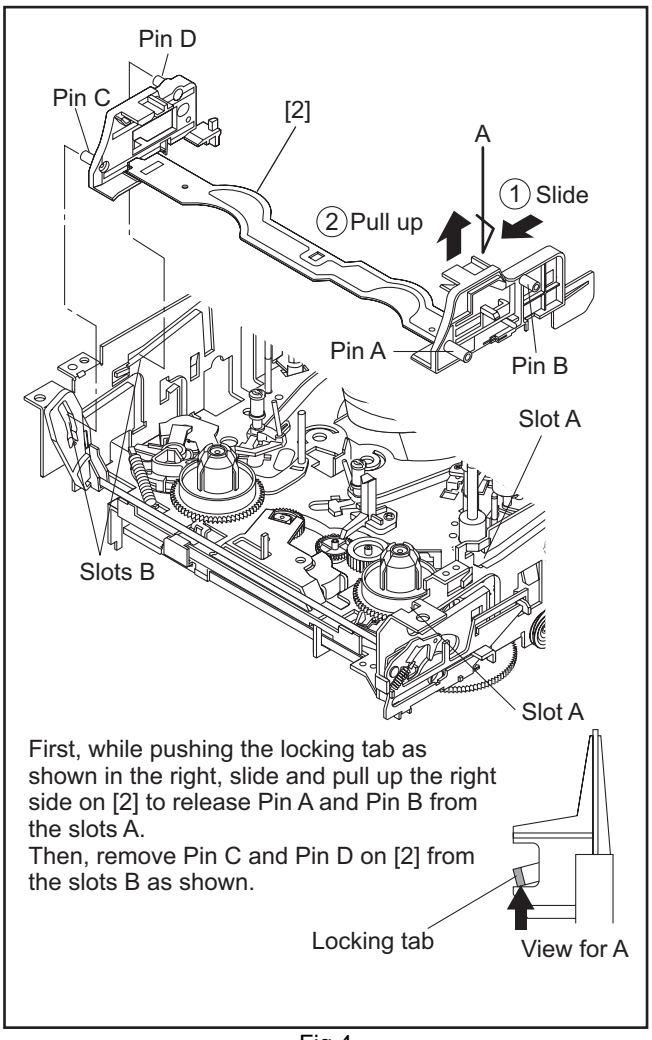
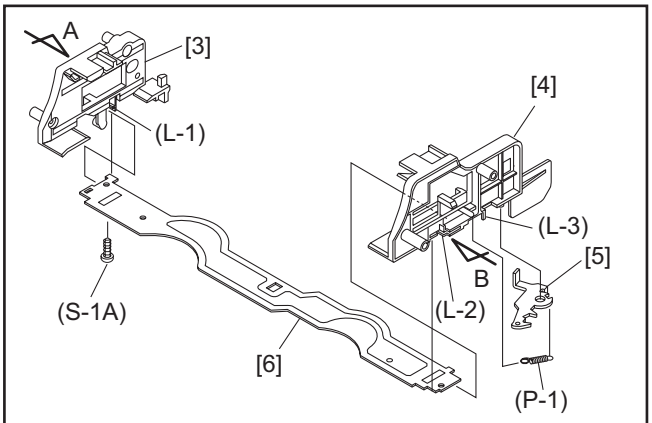
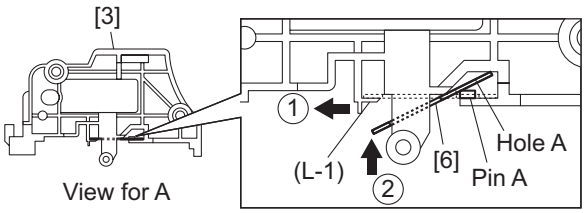

Pin D
Pin C
[2]
A
1 Slide
2 Pull up
Pin A
Pin B
Slot A
Slots B
Slot A
First, while pushing the locking tab as shown in the right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.
Locking tab
View for A

Fig.4




## Installation of [3] and [6]

First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in a direction of arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.




## Installation of [4] and [6]

Install [6] in [4] while pulling (L-2) in a direction of arrow. After installing [6] in [4], confirm that pin B of [4] enters hole B of [6] properly.

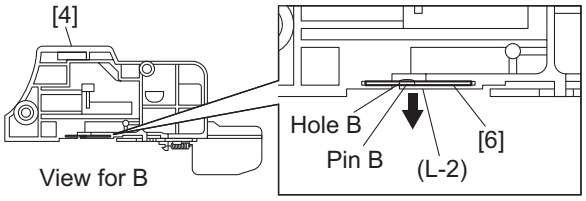



Fig.5

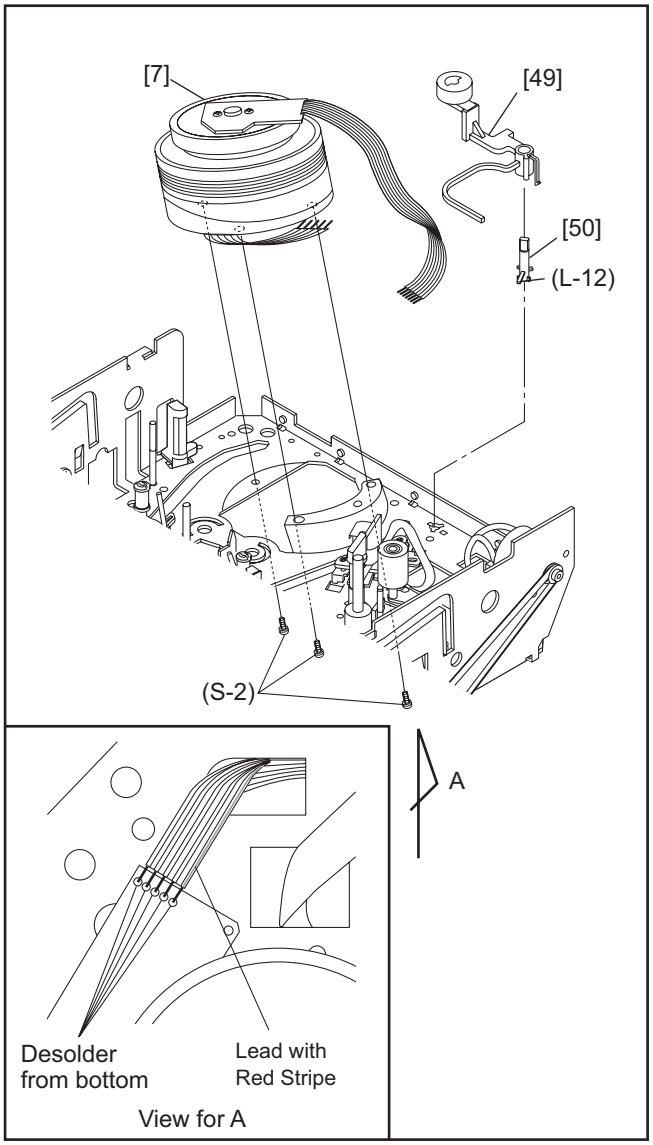



Fig.6

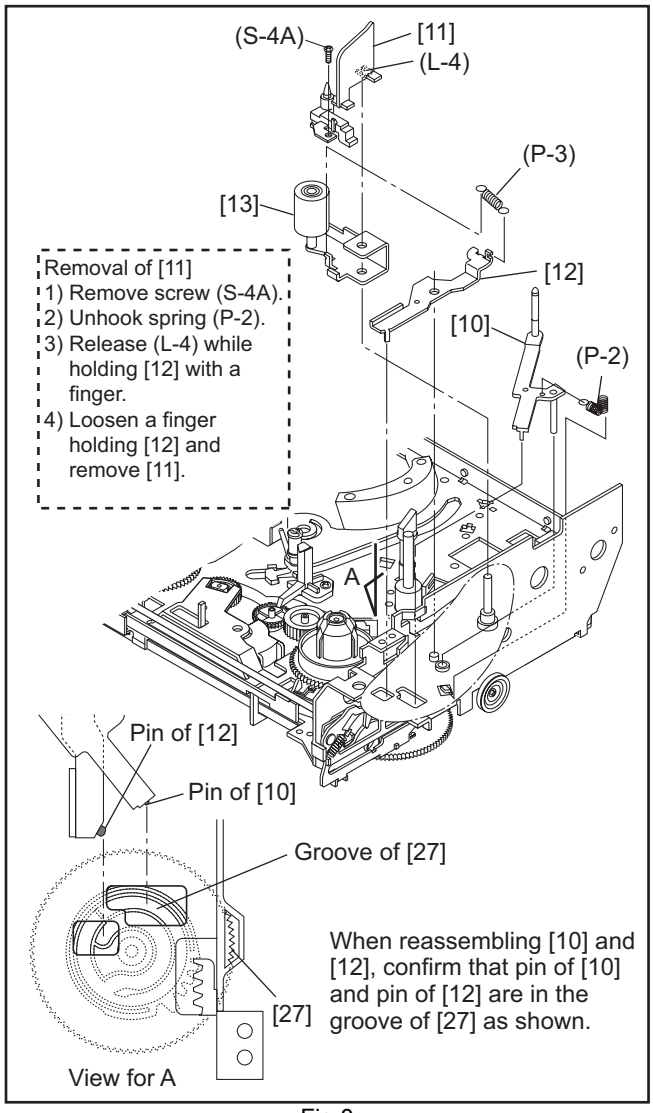



Fig.8

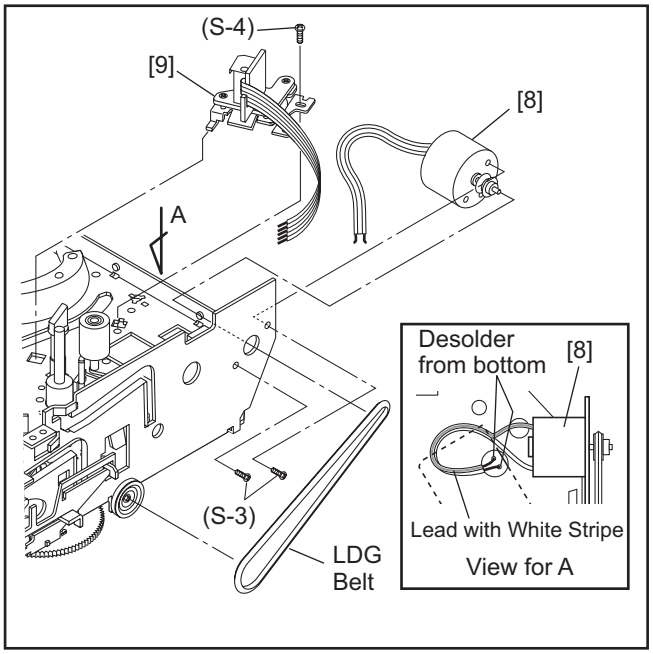



Fig.7

## Installation of [13] and [12]

Hook spring (P-3) up to [12] and [13], then install them to the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.)

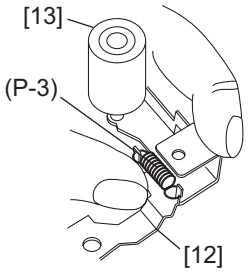



Fig. A

Install pin of [12] in groove of [27]. (Refer to Fig. B.)

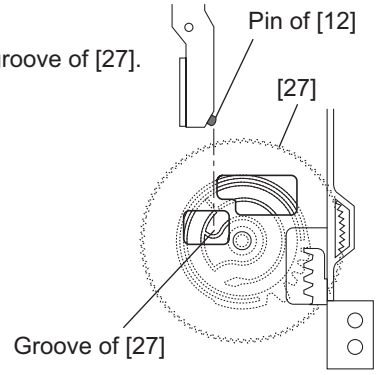



Fig. B (Top view)

Press both [12] and [13] till the groove of chassis pin appears, and adjust [13] to the notch of chassis. Then turn [13] a little in the direction of the arrow while pressing [12]. (Refer to Fig. C.)

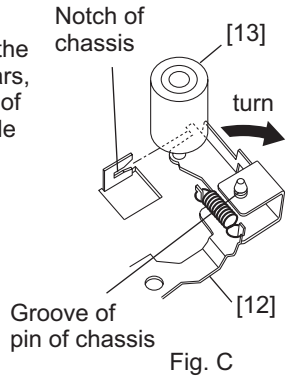



Fig. C

Install [11] and [10] while holding [12]. (Refer to Fig. DM8H-1.)

Fig.9

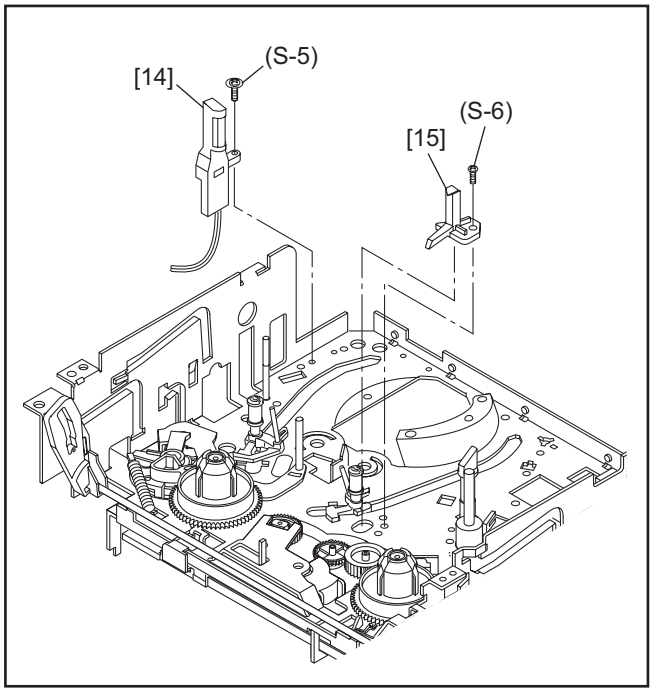



Fig.10

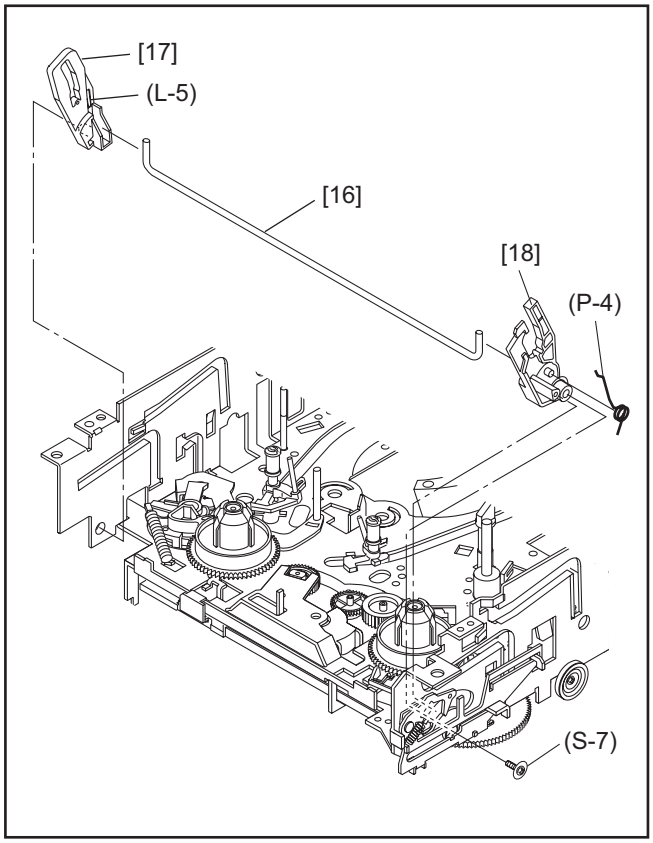



Fig.11

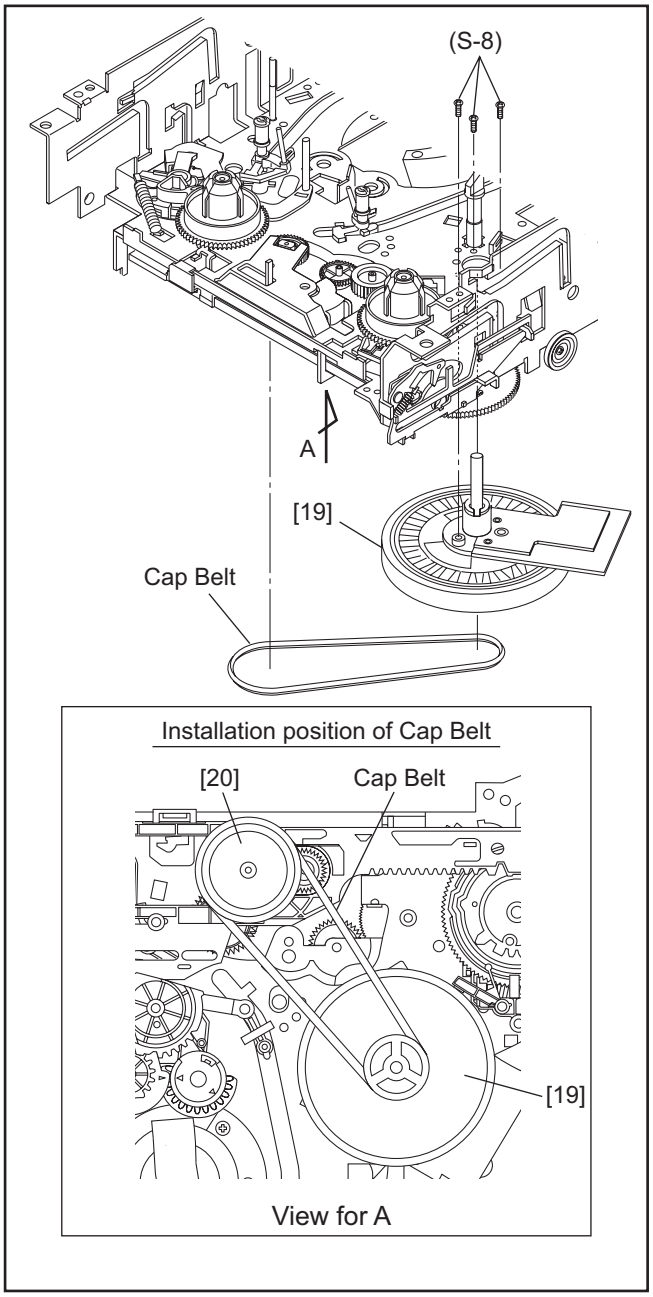

(S-8)
A
[19]
Cap Belt
Installation position of Cap Belt
[20]
Cap Belt
[19]
View for A

Fig.12

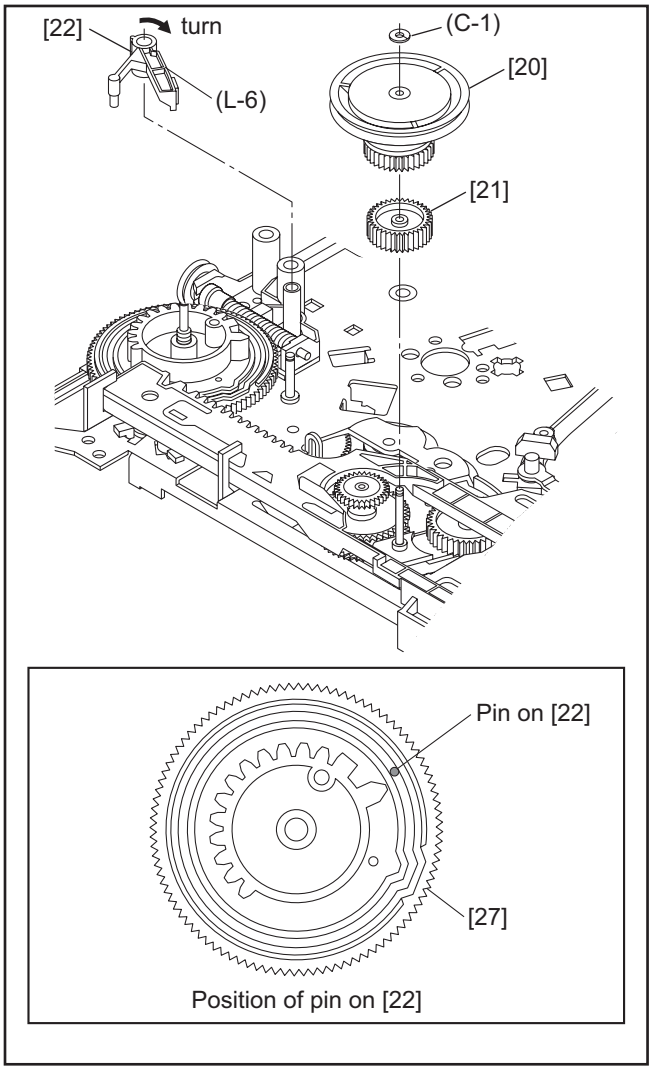

[22]
turn
(L-6)
(C-1)
[20]
[21]
Pin on [22]
[27]
Position of pin on [22]

Fig.13

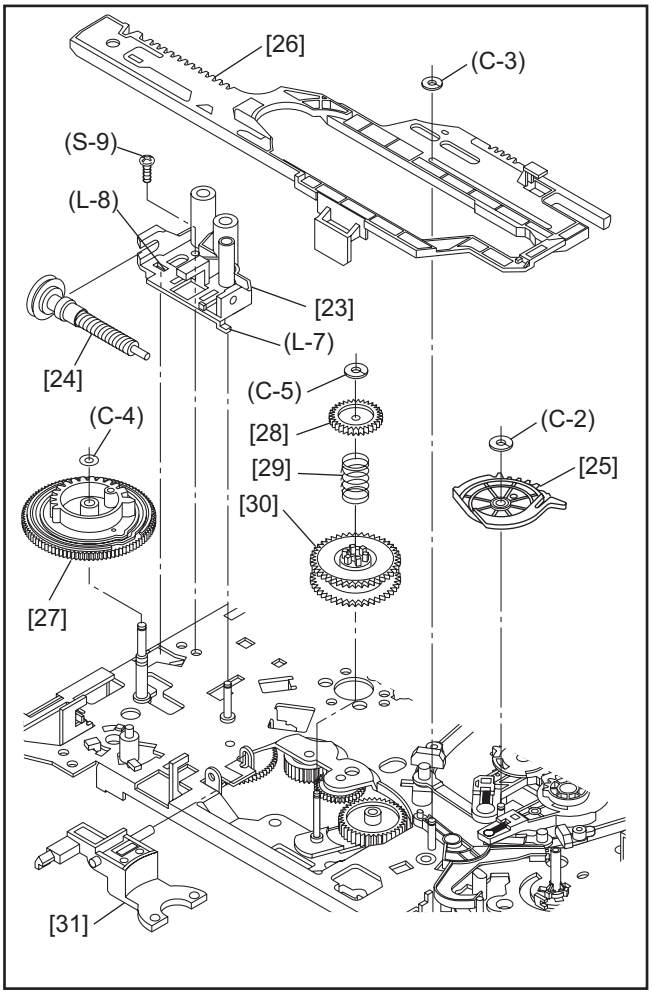



Fig.14

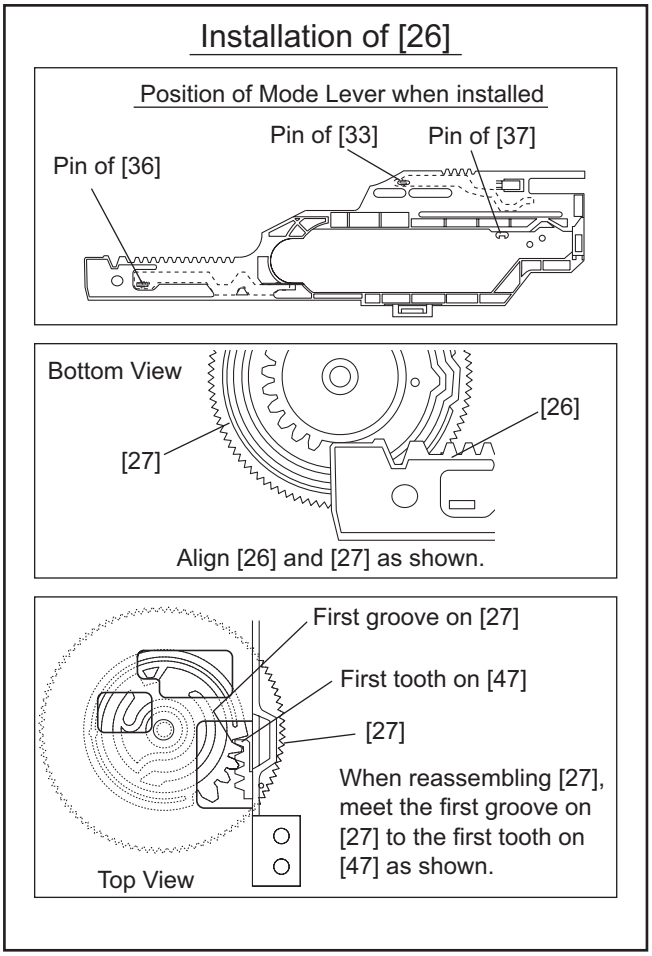

Installation of [26]
Position of Mode Lever when installed
Pin of [33]
Pin of [37]
Pin of [36]
Bottom View
[26]
[27]
Align [26] and [27] as shown.
First groove on [27]
First tooth on [47]
[27]
When reassembling [27], meet the first groove on [27] to the first tooth on [47] as shown.
Top View

Fig.15

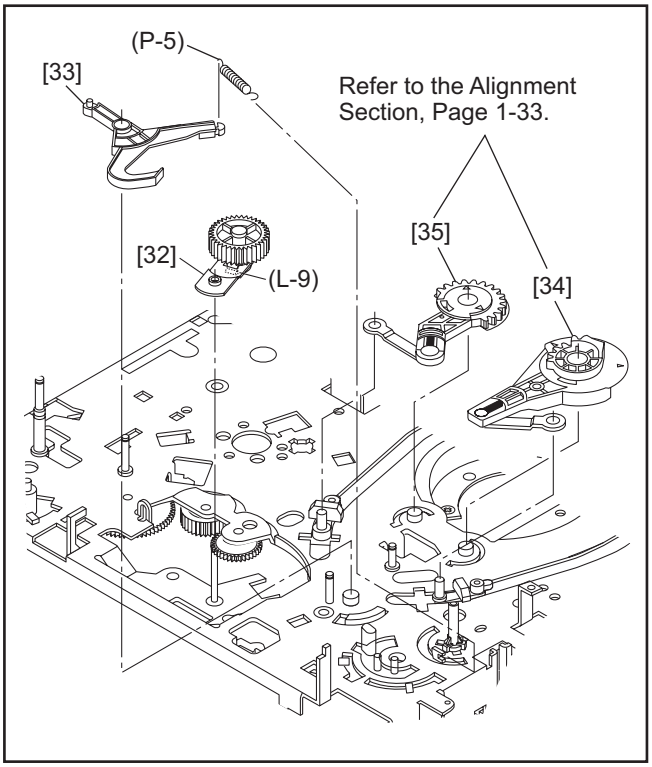



Fig.16

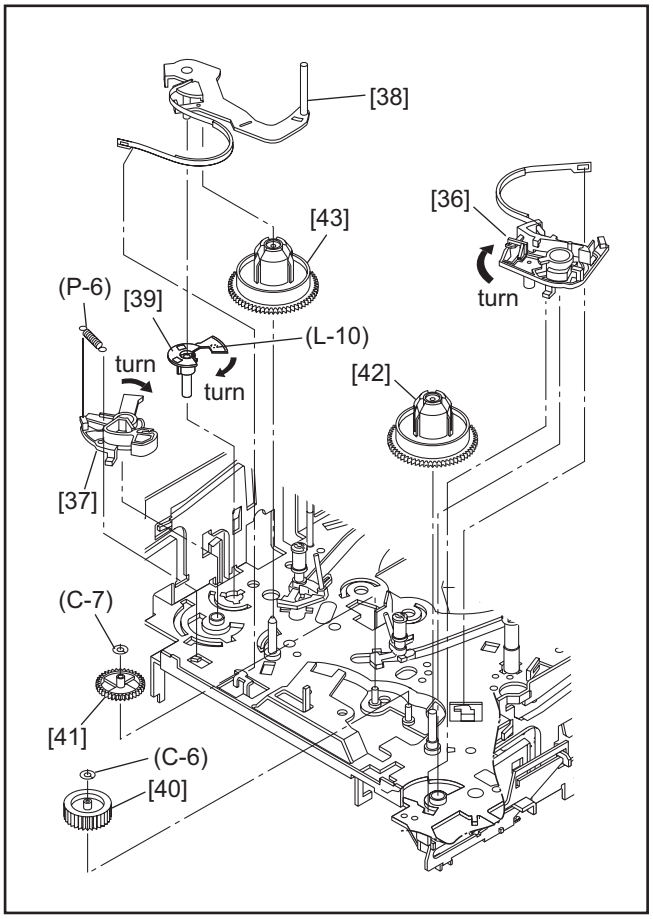



Fig.17

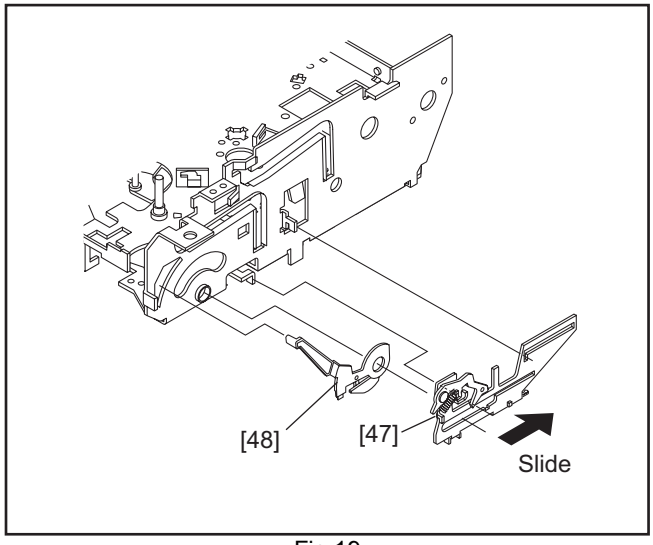



Fig.19

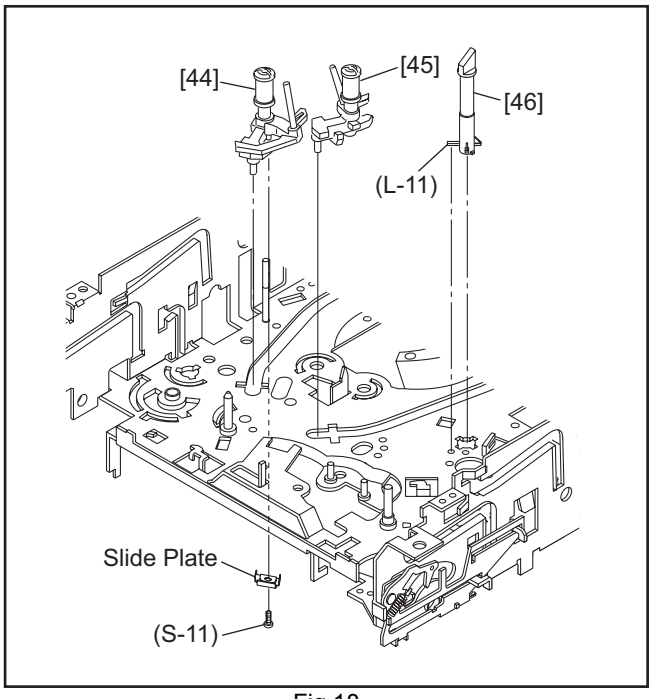



Fig.18

# SECTION 4
# ADJUSTMENT

## 4.1 ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is an abbreviation for "Circuit Board Assembly."

**NOTE:**

(1) Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.

(2) To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either "PR -" or "PR +" button on the remote control unit first, then the " ▸ "button (Front Panel only).

### 4.1.1 Test Equipment Required

(1) Oscilloscope: Dual-trace with 10:1 probe,
V-Range: 0.001~50V/Div.,
F-Range: DC~AC-20MHz

(2) Alignment Tape (MHPE)

### 4.1.2 Head Switching Position Adjustment

**Purpose:**

To determine the Head Switching position during playback.

**Symptom of Misadjustment:**

May cause Head Switching noise or vertical jitter in the picture.

| Test point | Adj.Point | Mode | Input |
|---|---|---|---|
| J23(V-OUT)<br>TP502(RF-SW)<br>GND | VR501<br>(Switching Point)<br>(MAIN CBA) | PLAY<br>(SP) | ----- |
| Tape | Measurement Equipment | Spec. | |
| MHPE | Oscilloscope | 6.5H±1H<br>(416μs±64μs) | |

Connections of Measurement Equipment

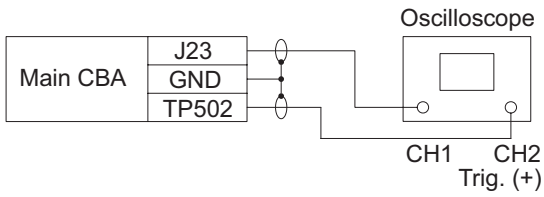
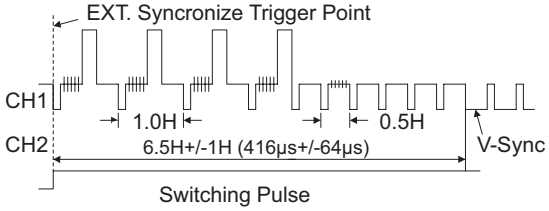



Figure 1




**Reference Notes:**

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H±1H (416μs±64μs) delayed position from the rising edge of the CH2 head switching pulse waveform.

## 4.2 STANDARD MAINTENANCE

### 4.2.1 Service Schedule of Components

This maintenance chart shows you the standard of replacement and cleaning time for each part.
Because those may replace depending on environment and purpose for use, use the chart for reference.

h: Hours ○: Cleaning ● : Replace

| Deck | | Periodic Service Schedule | | | |
|---|---|---|---|---|---|
| Ref.No. | Part Name | 1,000 h | 2,000 h | 3,000 h | 4,000 h |
| 1 | Cylinder Assembly | ○ | ● | ○ | ● |
| 2 | Loading Motor Assembly | | | ● | |
| 4 | Pulley Assembly | | ● | | ● |
| 66 | Tension Lever Assembly | | ● | | ● |
| 9 | ACE Head Assembly | | | ● | |
| 57,58 | Reel S, Reel T | | | ● | |
| 11 | Capstan Motor | | ● | | ● |
| 12 | Cap Belt | | ● | | ● |
| *13 | FE Head | | | ● | |
| *15 | F Brake Assembly (HI) | | ● | | ● |
| 16 | Idler Assembly (HI) | | ● | | ● |
| 24 | Pinch Arm Assembly | | ● | | ● |
| 26 | M Brake (SP) Assembly (HI) | | ● | | ● |
| 27 | M Brake (TU) Assembly (HI) | | ● | | ● |
| 44 | LDG Belt | | ● | | ● |

**Notes:**

(1) Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE Head)using 90% ethyl alcohol.
(2) After cleaning the parts, do all DECK ADJUSTMENTS.
(3) For the reference numbers listed above, refer to Deck Exploded Views.
* 13 ------ Recording model only
* 15 ------ Not used in 2 head model.

### 4.2.2 Cleaning

#### 4.2.2.1 Cleaning of Video Head

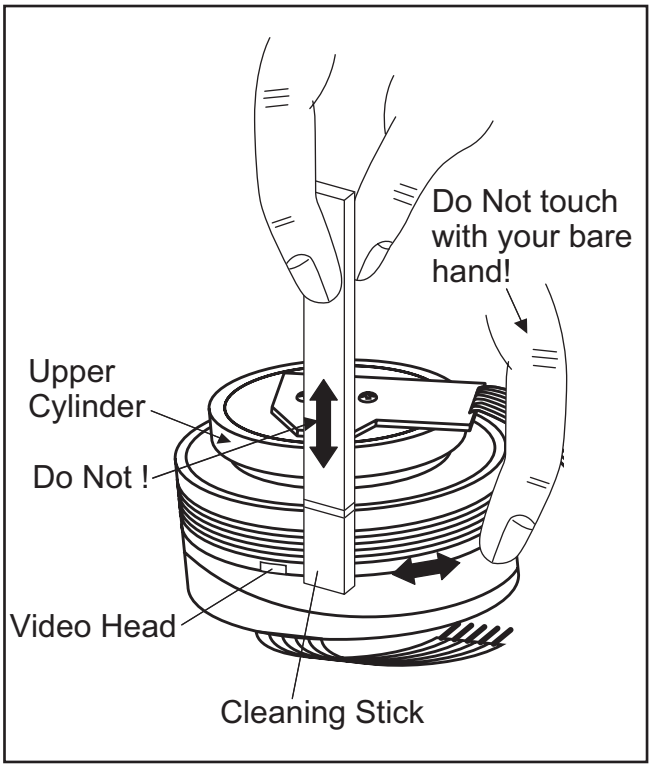
Clean the head with a head cleaning stick or chamois cloth.

**Procedure**

(1) Remove the top cabinet.
(2) Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
(3) Put a few drops of 90% ethyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

**Notes:**

(1) The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
(2) Wait for the cleaned part to dry thoroughly before operating the unit.
(3) Do not reuse a stained head cleaning stick or a stained chamois cloth.




#### 4.2.2.2 Cleaning of ACE Head

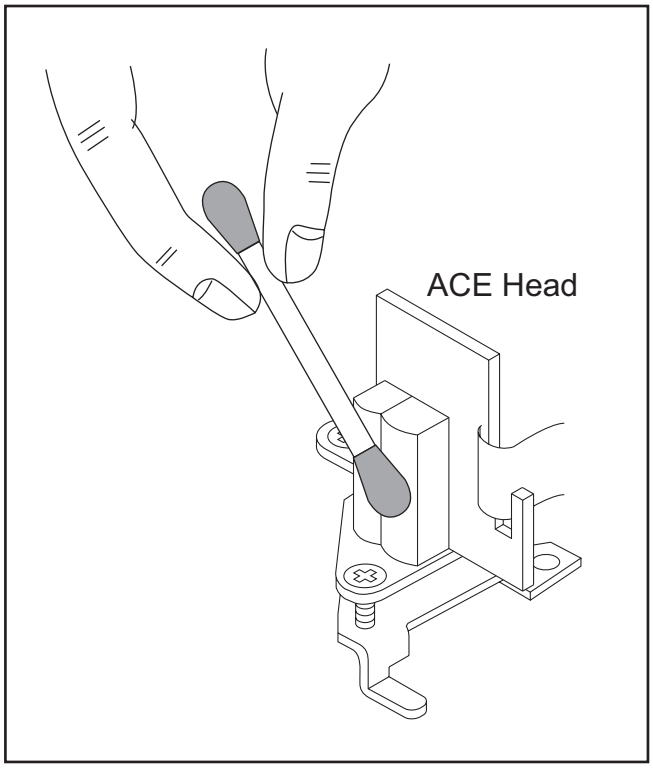
Clean the head with a cotton swab.

**Procedure**

(1) Remove the top cabinet.
(2) Dip the cotton swab in 90% ethyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

**Notes:**

(1) Avoid cleaning the ACE Head vertically.
(2) Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



### 4.3 SERVICE FIXTURE AND TOOLS

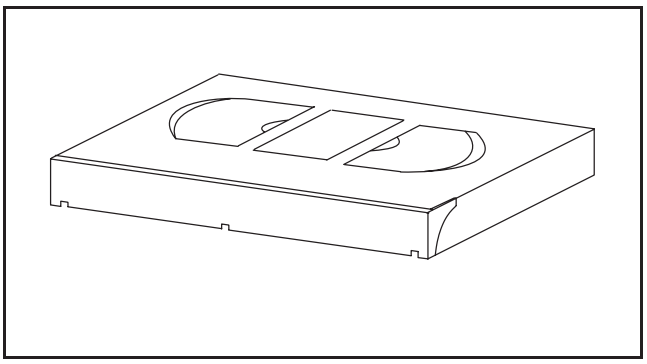


Fig.1

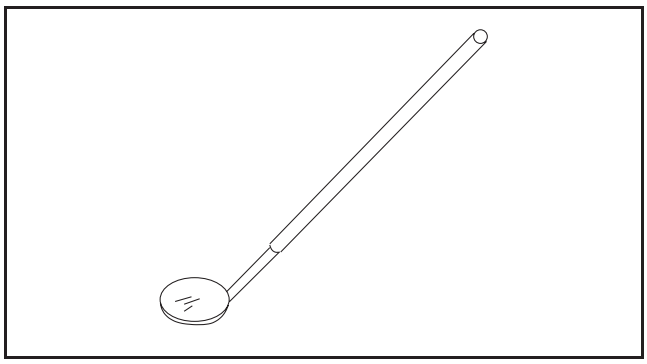


Fig.3

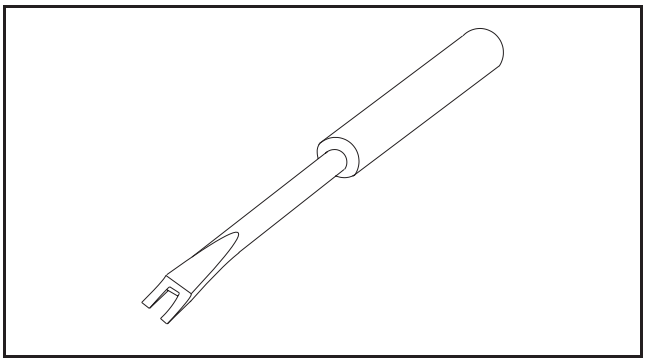


Fig.2

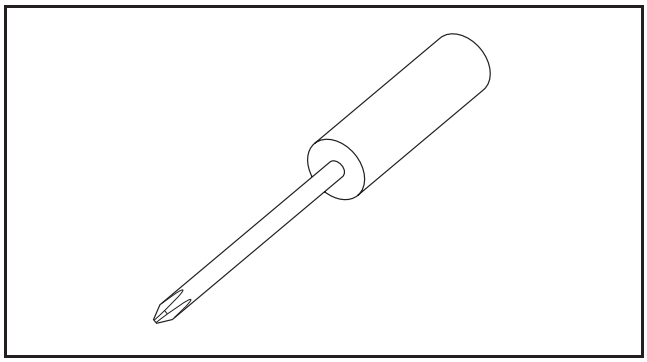


Fig.4

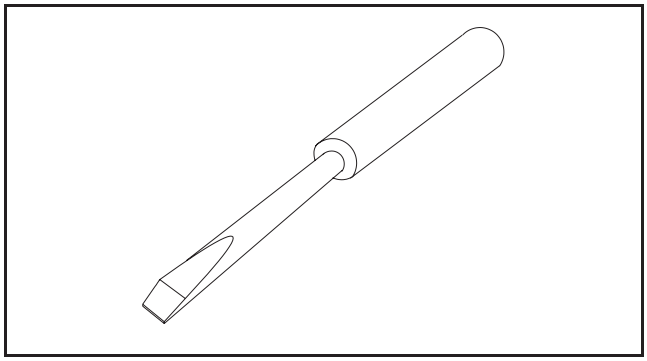


Fig.5

| Ref. No. | Name | Part No. | Adjustment |
|---|---|---|---|
| 1 | Alignment Tape | MHPE | Head Adjustment of ACE Head |
| 1 | Alignment Tape | MHPE-L<br>(4 Head model) | Azimuth and X Value Adjustment of ACE Head /<br>Adjustment of Envelope Waveform |
| 2 | Guide Roller Adj. Screwdriver | PTU94002 | Guide Roller |
| 3 | Mirror | Available Locally | Tape Transportation Check |
| 4 | Azimuth Adj. Screwdriver + | Available Locally | ACE Head Height |
| 5 | Flat Screwdriver - | Available Locally | X Value |

### 4.4 MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

#### 4.4.1 Service Information

(1) Method for Manual Tape Loading/Unloading To load a cassette tape manually:
   a) Disconnect the AC plug.
   b) Remove the Top Case and Front Assembly.
   c) Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out,by a spring motion, just as much as you have pushed in.
   d) Turn the LDG Belt in the appropriate direction shown in Fig. 1 for a minute or two to complete this task.

To unload a cassette tape manually:
   a) Disconnect the AC plug.
   b) Remove the Top Case and Front Assembly.
   c) Make sure that the Moving guide preparations are in the Eject Position.
   d) Turn the LDG Belt in the appropriate direction shown in Fig. 1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
   e) Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

(2) Method to place the Cassette Holder in the tapeloaded position without a cassette tape
   a) Disconnect the AC Plug.
   b) Remove the Top Case and Front Assembly.
   c) Turn the LDG Belt in the appropriate direction shown in Fig.1. Release the locking tabs shown in Fig. 1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

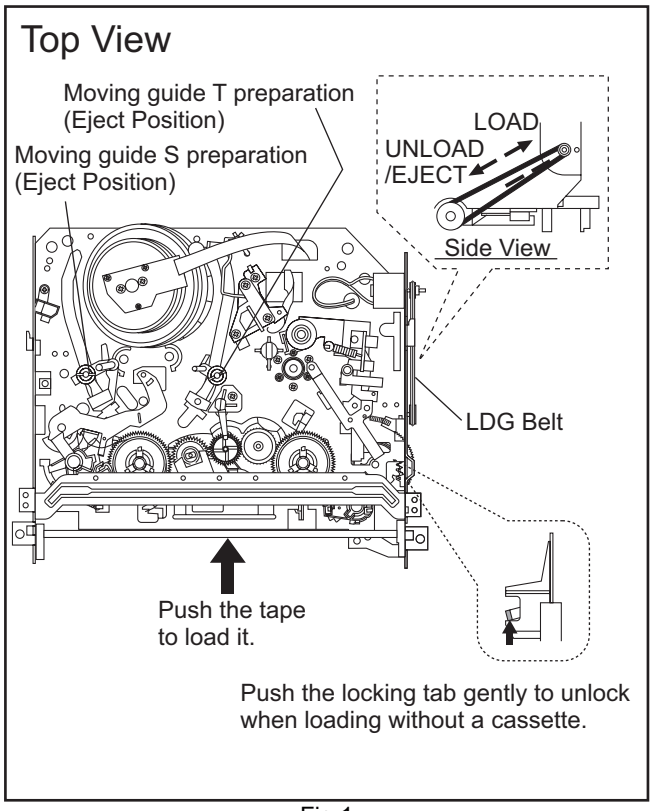



Fig.1

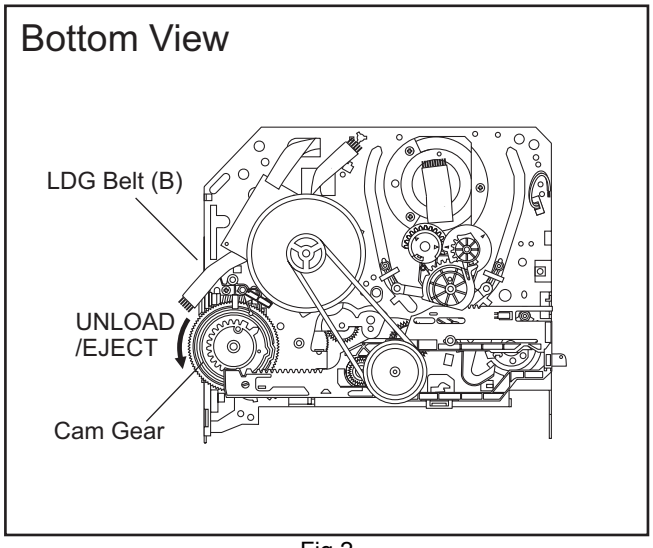



Fig.2

### 4.4.2 Tape Interchangeability Alignment

**Note:**

To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded.

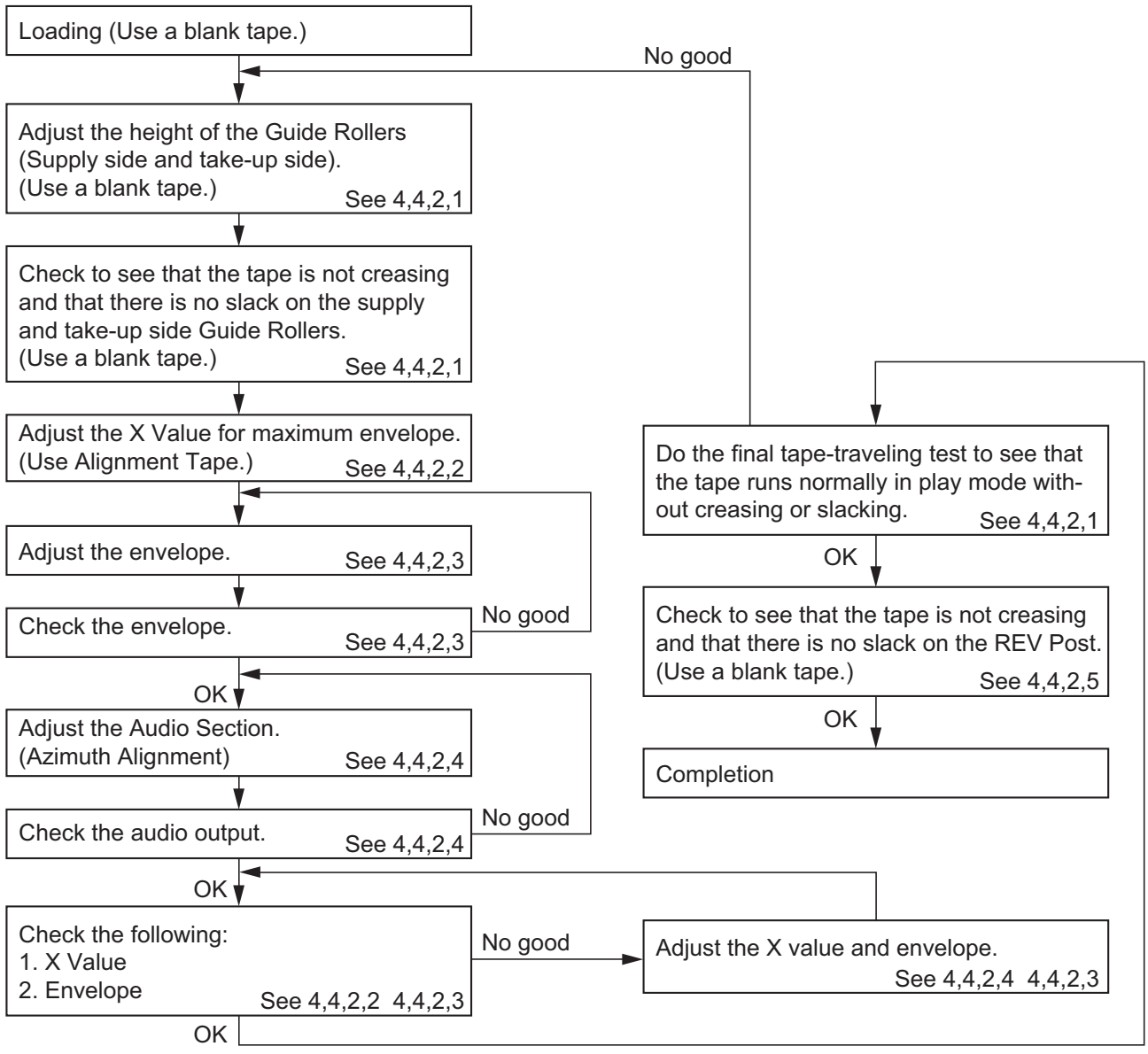
**Equipment required:**

Dual Trace Oscilloscope
VHS Alignment Tape (MHPE-L)
Guide Roller Adj. Screwdriver
Flat Screwdriver (Purchase Locally)

**Note:**

Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling


Loading (Use a blank tape.)
Adjust the height of the Guide Rollers (Supply side and take-up side). (Use a blank tape.) See 4,4,2,1
Check to see that the tape is not creasing and that there is no slack on the supply and take-up side Guide Rollers. (Use a blank tape.) See 4,4,2,1
Adjust the X Value for maximum envelope. (Use Alignment Tape.) See 4,4,2,2
Adjust the envelope. See 4,4,2,3
Check the envelope. See 4,4,2,3
No good
OK
Adjust the Audio Section. (Azimuth Alignment) See 4,4,2,4
Check the audio output. See 4,4,2,4
No good
OK
Check the following:
1. X Value
2. Envelope
See 4,4,2,2 4,4,2,3
No good
OK
Adjust the X value and envelope.
See 4,4,2,4 4,4,2,3
Do the final tape-traveling test to see that the tape runs normally in play mode without creasing or slacking. See 4,4,2,1
No good
OK
Check to see that the tape is not creasing and that there is no slack on the REV Post. (Use a blank tape.) See 4,4,2,5
OK
Completion

#### 4.4.2.1 Preliminary/Final Checking and Alignment of Tape Path

**Purpose:**

To make sure that the tape path is well stabilized.

**Symptom of Misalignment:**

If the tape path is unstable, the tape will be damaged.

**Note:**

Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

(1) Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. 3 and 4.)

(2) If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. 3 and 5.)

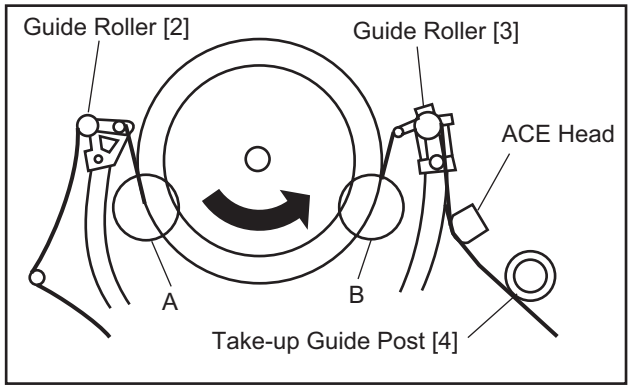



Fig.3

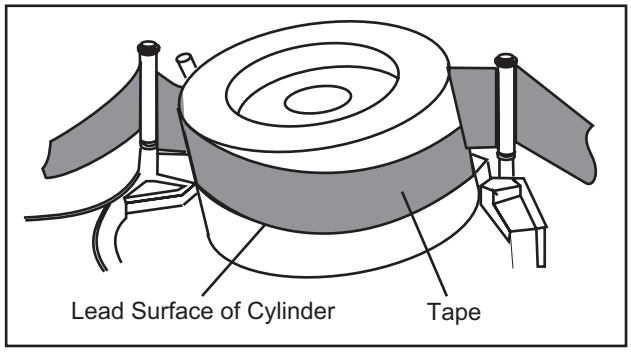



Fig.4

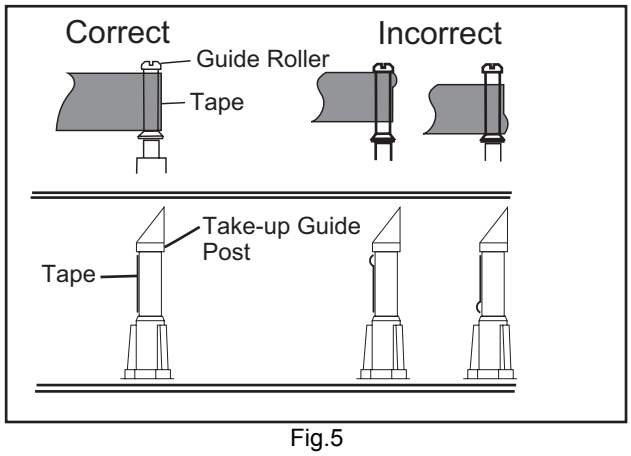



Fig.5

(3) Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. 3 and 5)

(4) If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. 6)

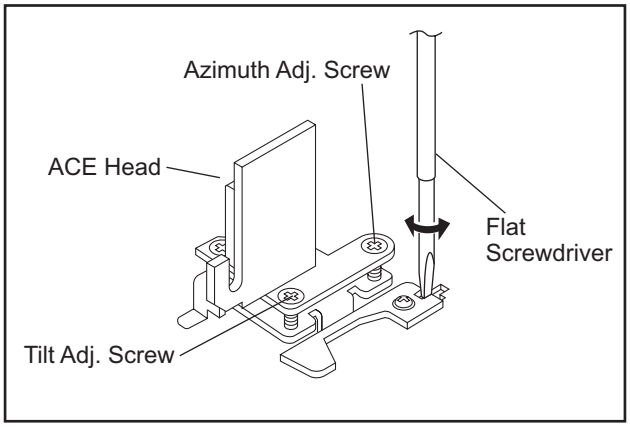



Fig.6

#### 4.4.2.2 X Value Alignment

**Purpose:**

To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

**Symptom of Misalignment:**

If the Horizontal Position of the ACE Head is not properly aligned, maximum PB FM envelope cannot be obtained at the preset position of the Tracking Control Circuit.

(1) Connect the oscilloscope to TP301 (C-PB) and TP503 (CTL) on the Main CBA. Use TP504 (RF-SW) as a trigger.

(2) Playback the Gray Scale of the Alignment Tape (FL6NS8) and confirm that the PB FM signal is present.

(3) Set the Tracking Control Circuit to the preset position by pressing “PR +” button and then “ ▸ ” button on the unit. (Refer to note on bottom of page 1-29.)

(4) Use the Flat Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum.(Fig. 6)

(5) To shift the CTL waveform, press “PR +”or “PR -”button on the remote control unit. Then make sure that the maximum output position of PB FM envelope signal becomes within ±2ms from preset position.

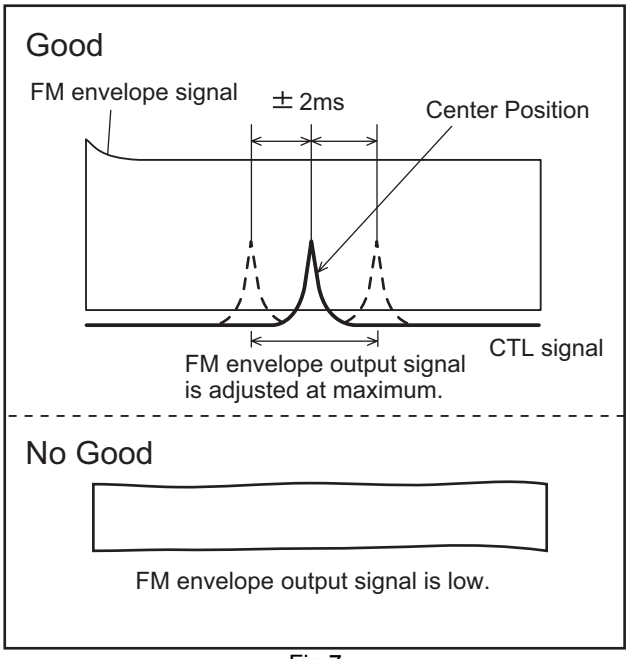



Fig.7

(6) Set the Tracking Control Circuit to the preset position by pressing “PR +” button and then “ ▸ ” button on the unit.

#### 4.4.2.3 Checking/Adjustment of Envelope Waveform

**Purpose:**

To achieve a satisfactory picture, adjust the Guide Rollers so that the PB FM envelope becomes as flat as possible.

**Symptom of Misalignment:**

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight varia tion of the Tracking Control Circuit.

(1) Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP504 (RF-SW) as a trigger.

(2) Playback the Gray Scale on the Alignment Tape(MHPE-L). Set the Tracking Control Circuit to the preset position by pressing “PR +” button and then” ▸ ”button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. 3, Page 1-28) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment,turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.

(3) If the envelope is as shown in Fig. 7, adjust the height of Guide Roller [2] (Refer to Fig. 3) so that the waveform looks like the one shown in Fig. 9.

(4) If the envelope is as shown in Fig. 8, adjust the height of Guide Roller [3] (Refer to Fig. 3) so that the waveform looks like the one shown in Fig. 9.

(5) When Guide Rollers [2] and [3] (Refer to Fig. 3)are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. 9.

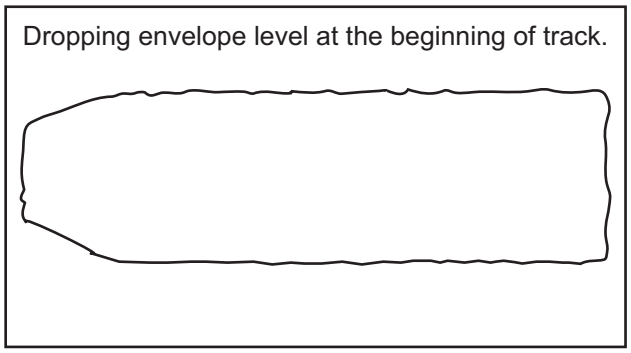



Fig.8

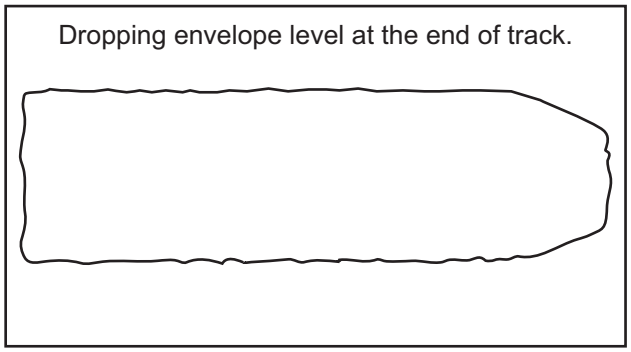



Fig.9

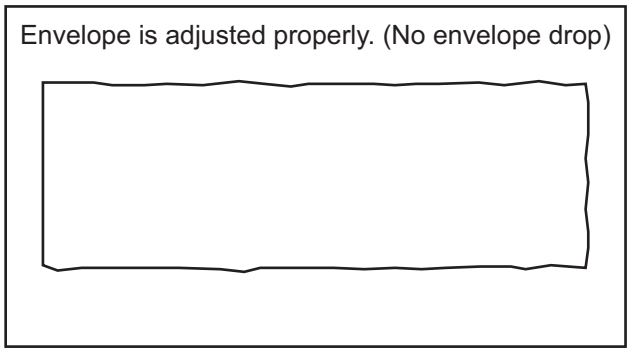



Fig.10

**Note:**

Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. 3), check the X Value by pushing the “PR +”or “PR -” buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the “PR +” button on the unit to achieve 1/2 level of envelope should match the number of pushes of the “PR -” button on the unit from center. If required, redo the “X Value Alignment.”

#### 4.4.2.4 Azimuth Alignment of Audio/Control/ Erase Head

**Purpose:**

To correct the Azimuth alignment so that the Audio/Control/ Erase Head meets tape tracks properly.

**Symptom of Misalignment:**

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

(1) Connect the oscilloscope to the audio output jack on the rear side of the deck.
(2) Playback the alignment tape (MHPE-L) and confirm that the audio signal output level is 8kHz.
(3) Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscillo scope is at maximum. (Fig. 6)

**Note:**

Upon completion of the adjustment of Azimuth Adj. Screw, check the X Value by pushing the “PR +” or “PR -“buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the “PR +“ button on the unit to achieve 1/2 level of envelope should match the number of pushes of the “PR -”button on the unit from center. If required, redo the “X Value Alignment.”

#### 4.4.2.5 Checking and Alignment of Tape Path during reversing

**Purpose:**

To make sure that the tape path is well stabilized during reversing.

**Symptom of Misalignment:**

If the tape path is unstable during reversing, the tape will be damaged.

**Note:**

Do not use an Alignment Tape for this proce dure. If the unit is not correctly aligned, the tape may be damaged.

(1) Insert a blank cassette tape into the tray and set the unit to REV. Then confirm if the tape has been curled up or bent at the Take-up Guide Post[4] or REV Post[5]. (Refer to Fig. 11 and 12.)
(2) When the tape has been curled up or bent, turn the alignment screw to adjust the height of REV Post. (Refer to Fig. 11 and 13.)

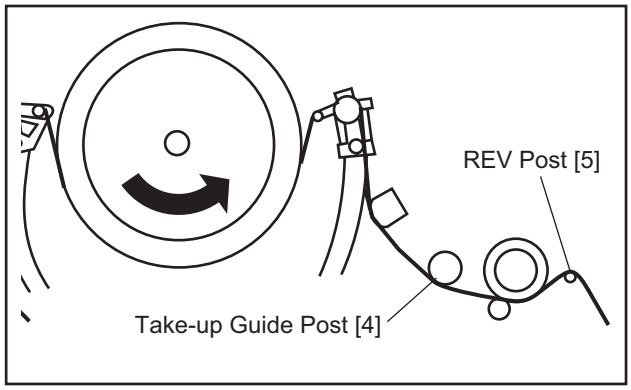



Fig.11

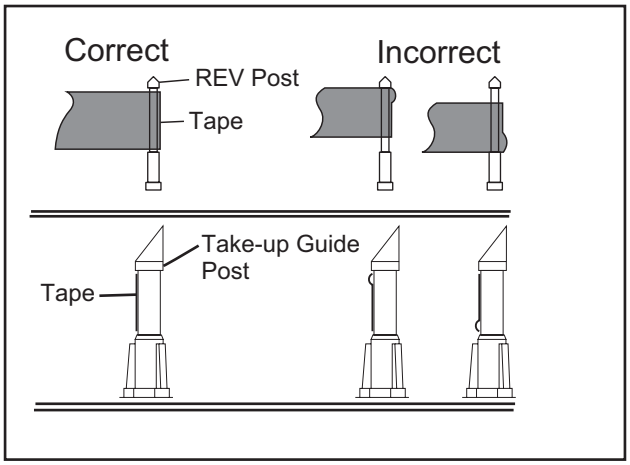



Fig.12

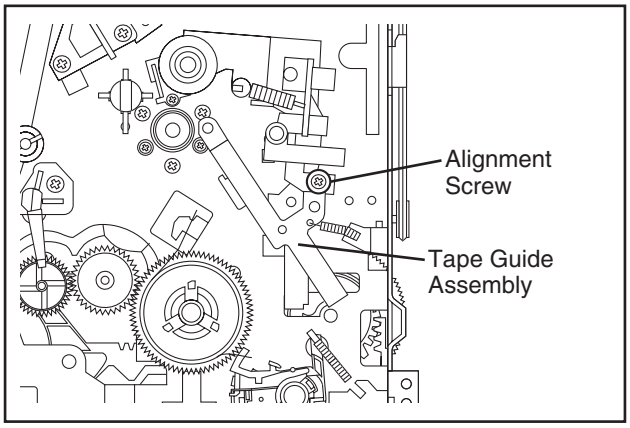



Fig.13

# SECTION 5
# TROUBLESHOOTING

### 5.1 HOW TO INITIALIZE THE VCR

To put the program back at the factory-default, initialize the VCR as the following procedure.

(1) Make sure that no timer programming is set. If not, reset all timer programming.
(2) Turn the power off.
(3) Press the [■/⏏] button and [PR +] button on the unit simultaneously for at least 2 seconds.
Upon completion of the initialization of the EEPROM, "☑"mark on the display turns on a light.
(4) Release the [■/⏏] button and [PR +] button to complete this mode.

### 5.2 FUNCTION INDICATOR SYMBOLS

**Note:**

The following symbols will appear on the indicator panel to indicate the current mode or operation of the VCR.
On-screen modes will also be momentarily displayed on the tv screen when you press the operation buttons.

#### 5.2.1 Display panel

| MODE | INDICATOR ACTIVE | |
|---|---|---|
| POWER ON | " PWR." | ON |
| CASSETTE "IN"<br>CASSETTE "OUT" | " ⟨⟩ "<br>" ⟨⟩ " | ON<br>OFF |
| CLOCK | " 88:88 " | ON |
| REC | " REC " | ON |
| REC PAUSE | " REC " | Blinks at 0.8Hz interval |
| T-REC,OTR | " ☑ " | ON<br>(T-REC OFF,T-REC incomplete<br>Blinks at 0.8Hz interval) |
| RF OUT | RF out channel number is displayed on the indicator panel. | |
| S-INH condition | All modes | Blinks at 0.8Hz interval |
| All lighting mode | All characters | ON |

### 5.2.2 TV screen

**Note:**

OSD for mechanical error will be displayed for 5 sec. after the mechanical error occurs.

| Cause | Indicator Active |
|---|---|
| When reel or capstan mechanism is not functioning correctly | "⏏ /R" is displayed on a TV screen. (Refer to Fig. 1.) |
| When tape loading mechanism is not functioning correctly | "⏏ /T" is displayed on a TV screen. (Refer to Fig. 2.) |
| When cassette loading mechanism is not functioning correctly | "⏏ /C" is displayed on a TV screen. (Refer to Fig. 3.) |
| When the drum is not working properly | "⏏ /D" is displayed on a TV screen. (Refer to Fig. 4.) |
| P-ON Power safety detection | "⏏ /P" is displayed on a TV screen. (Refer to Fig. 5.) |

When reel or capstan mechanism is not functioning correctly

Fig.1

When tape loading mechanism is not functioning correctly

Fig.2

When cassette loading mechanism is not functioning correctly

Fig.3

When the drum is not working properly

Fig.4

P-ON Power safety detection

Fig.5

## 5.3 ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

**All alignments are to be performed with the mechanism in Eject mode,** in the sequence given. Each procedure assumes that all previous procedures have been completed.

**IMPORTANT:**

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

### 5.3.1 Alignment points in Eject Position

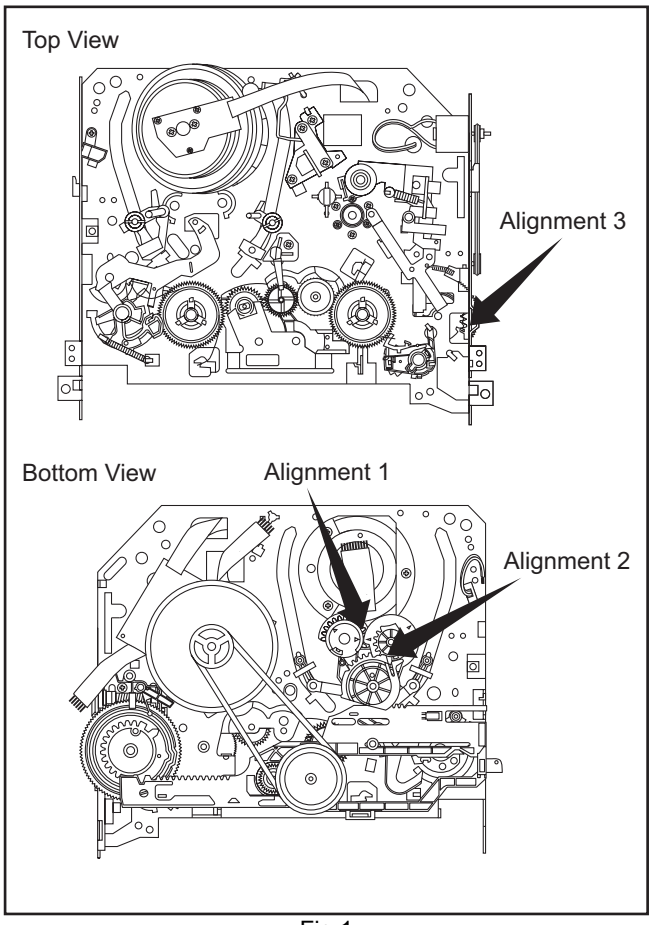



Fig.1

#### 5.3.1.1 Alignment 1

**Loading Arm (SP) and (TU) Assembly**

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. 2.

#### 5.3.1.2 Alignment 2

**Mode Gear**

Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. 2.

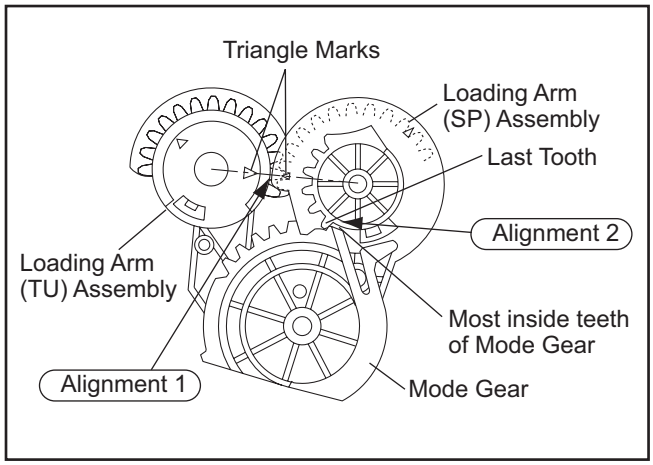



Fig.2

#### 5.3.1.3 Alignment 3

**Cam Gear (A) (HI), Rack Assembly**

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) (HI) as shown in Fig. 3.

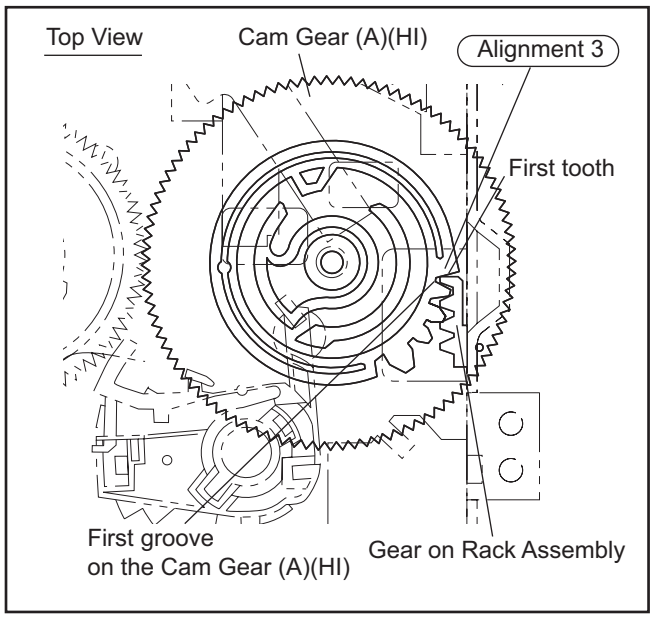



Fig.3

## 5.4 IC PIN FUNCTION DESCRIPTIONS

### 5.4.1 IC501( SERVO / SYSTEM CONTROL IC )

"H" ≥ 4.5V, "L" ≤ 1.0V

| Pin No. | IN/ OUT | Signal Name | Function | Active Level |
|---|---|---|---|---|
| 1 | IN | SC2-IN | Input Signal from Pin 8 of SCART2 | A/D |
| 2 | IN | PG-DELAY | Video Head Switching Pulse Signal Adjusted Voltage | A/D |
| 3 | IN | POW-SAF | P-ON Power Detection Input Signal | A/D |
| 4 | IN | END-S | Tape End Position Detect Signal | A/D |
| 5 | IN | AFC | Automatic Frequency Control Signal | A/D |
| 6 | IN | V-ENV | Video Envelope Comparator Signal | A/D |
| 7 | IN | KEY-1 | Key Scan Input Signal 1 | A/D |
| 8 | IN | KEY-2 | Key Scan Input Signal 2 | A/D |
| 9 | IN | LD-SW | Deck Mode Position Detector Signal | A/D |
| 10 | IN | ST-S | Tape Start Position Detector Signal | A/D |
| 11 | - | N.U. | Not Used | - |
| 12 | - | N.U. | Not Used | - |
| 13 | OUT | D-V-SYNC | Dummy V-sync Output | H/Hi-z |
| 14 | IN | REMOCON-IN | Remote Control Sensor | L |
| 15 | OUT | C-ROTA | Color Phase Rotary Changeover SIgnal | H/L |
| 16 | OUT | H-A-SW | Video Head Amp Switching Pulse | H/L |
| 17 | IN | H-A-COMP | Head Amp Comparator Signal | H/L |
| 18 | OUT | RF-SW | Video Head Switching Pulse | H/L |
| 19 | OUT | Hi-Fi-H-SW | Hi-Fi Audio Head Switching Pulse | H/L |
| 20 | - | N.U. | Not Used | - |
| 21 | - | N.U. | Not Used | - |
| 22 | - | N.U. | Not Used | - |
| 23 | - | N.U. | Not Used | - |
| 24 | - | N.U. | Not Used | - |
| 25 | - | N.U. | Not Used | - |
| 26 | - | N.U. | Not Used | - |
| 27 | - | N.U. | Not Used | - |
| 28 | OUT | LINE-MUTE | Audio Mute Control Signal | H |
| 29 | - | N.U. | Not Used | - |
| 30 | - | N.U. | Not Used | - |
| 31 | IN | REC-SAF-SW | Recording Safety SW Detect (With Record tab="L"/Without Record tab="H") | H |
| 32 | IN | A-MODE | Hi-Fi Tape Detection Signal | L |
| 33 | OUT | D-REC-H | Delayed Record Signal | H |
| 34 | IN | RESET | System Reset Signal (Reset="L") | L |
| 35 | IN | Xcin | Sub Clock | - |
| 36 | OUT | Xcout | Sub Clock | - |
| 37 | - | Vcc | Vcc | - |
| 38 | IN | Xin | Main Clock Input | - |
| 39 | OUT | Xout | Main Clock Input | - |
| 40 | - | Vss | Vss(GND) | - |
| 41 | - | N.U. | Not Used | - |
| 42 | - | N.U. | Not Used | - |
| 43 | IN | CLKSEL | Clock Select (GND) | - |
| 44 | IN | OSCin | Clock Input for letter size | - |
| 45 | OUT | OSCout | Clock Output for letter size | - |
| 46 | - | N.U. | Not Used | - |
| 47 | - | LP | LP | - |
| 48 | IN | FSC-IN [4.43MHz] | 4.43MHz Clock Input | - |
| 49 | - | OSDVss | OSDVss | - |
| 50 | IN | OSD-V-IN | OSD Video Signal Input | - |
| 51 | - | N.U. | Not Used | - |
| 52 | OUT | OSD-V-OUT | OSD Video Signal Output | - |
| 53 | - | OSDVcc | OSDVcc | - |

| Pin No. | IN/ OUT | Signal Name | Function | Active Level |
|---|---|---|---|---|
| 54 | - | HLF | LPF Connected Terminal (Slicer) | - |
| 55 | IN | COLOR-IN | SECAM or MESECAM Chroma Video Input Signal at Super Impose | Z/L |
| 56 | - | N.U. | Not Used | - |
| 57 | - | N.U. | Not Used | - |
| 58 | IN | C-SYNC | Composite Synchronized Pulse | PULSE |
| 59 | OUT | 8POUT-1 | SCART 1 8Pin Output Control Signal | H/L |
| 60 | - | N.U. | Not Used | - |
| 61 | IN | SECAM-H | SECAM Mode at High | H/L |
| 62 | - | N.U. | Not Used | - |
| 63 | - | N.U. | Not Used | - |
| 64 | - | N.U. | Not Used | - |
| 65 | OUT | TRICK-H | Special Playback = “H” in SECAM Mode | H |
| 66 | OUT | C-POW-SW | Capstan Power Switching Signal | H/L |
| 67 | OUT | P-ON-H | Power On Signal at High | H |
| 68 | OUT | DRV-DATA | LED Clock Driver IC Control Data | H/L |
| 69 | OUT | DRV-STB | LED Clock Driver IC Chip Select Signal | H/L |
| 70 | OUT | DRV-CLK | LED Clock Driver IC Control Clock | H/L |
| 71 | OUT | IIC-BUS SCL | $I^2C$ BUS Control Clock | H/L |
| 72 | IN/ OUT | IIC-BUS SDA | $I^2C$ BUS Control Data | H/L |
| 73 | - | N.U. | Not Used | - |
| 74 | - | N.U. | Not Used | - |
| 75 | - | N.U. | Not Used | - |
| 76 | OUT | C-CONT | Capstan Motor Control Signal | PWM |
| 77 | OUT | D-CONT | Drum Motor Control Signal | PWM |
| 78 | OUT | C-F/R | Capstan Motor FWD/REV Control Signal (FWD=”L”/ REV=”H”) | H/L |

| Pin No. | IN/ OUT | Signal Name | Function | Active Level |
|---|---|---|---|---|
| 79 | IN | S-REEL | Supply Reel Rotation Signal | PULSE |
| 80 | IN | T-REEL | Take Up Reel Rotation Signal | PULSE |
| 81 | OUT | LM-FWD/ REV | Loading Motor Control Signal | H/L/ Hi-z |
| 82 | - | N.U. | Not Used | - |
| 83 | OUT | A-MUTE | Audio Mute Control Signal | H |
| 84 | - | N.U. | Not Used | - |
| 85 | - | N.U. | Not Used | - |
| 86 | IN | P-DOWN-L | Power Voltage Down Detector Signal | L |
| 87 | IN | C-FG | Capstan Motor Rotation Detection Pulse | PULSE |
| 88 | - | N.U. | Not Used | - |
| 89 | - | N.U. | Not Used | - |
| 90 | IN | D-PFG | Drum Motor Pulse Generator | PULSE |
| 91 | - | AMPVREF OUT | V-Ref for CTL AMP | - |
| 92 | - | AMPVREFi n | V-Ref for CTL AMP | - |
| 93 | - | P80/C | P80/C Terminal | - |
| 94 | IN/ OUT | CTL (-) | Playback/Record Control Signal (-) | H/L |
| 95 | IN/ OUT | CTL (+) | Playback/Record Control Signal (+) | H/L |
| 96 | - | AMPC | CTL AMP Connected Terminal | - |
| 97 | - | CTL | To Monitor for CTL AMP Output | PULSE |
| 98 | - | AMPVcc | AMPVcc | - |
| 99 | - | AVcc | A/D Converter Power Input/ Standard Voltage Input | - |
| 100 | IN | AGC | IF AGC Comparator Signal | A/D |

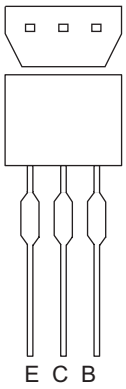
Notes:

Abbreviation for Active Level:

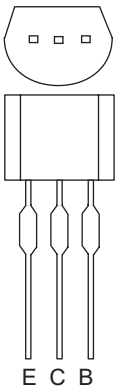
PWM -----Pulse Wide Modulation

A/D--------Analog - Digital Converter

## 5.5 LEAD IDENTIFICATIONS

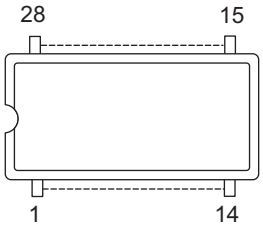



KRA103M-AT/P
KRC103M-AT/P
KTA-1266-GR-AT/P
KTA1267Y-AT/P
KTC3199-(BL,GR,Y)-AT/P

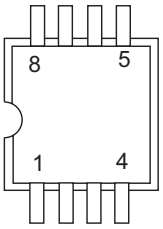



KTA1281Y-AT/P
KTC3203-Y-AT/P
KTC3205-Y-AT/P

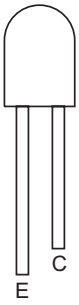
PT6958-FN-TP(L)



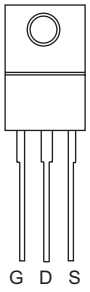

CAT24WC02WI-TE13



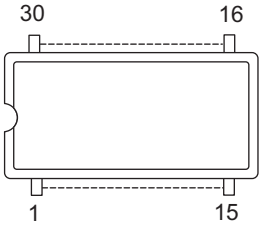

PT204-6B-12



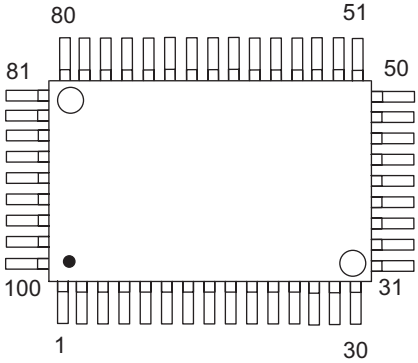

2SK3566



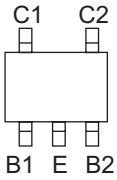

LA70100M-TRM



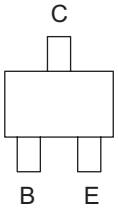

LA71750EM-MPB-E
M3776AMCA-AA4GP-U1



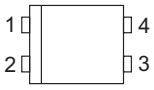

RN1511(TE85R.F)




KRC103S-RTK/P
KTA1504S-Y-RTK/P
KTC3875Y-RTK
KTC3875S-Y-RTK/P

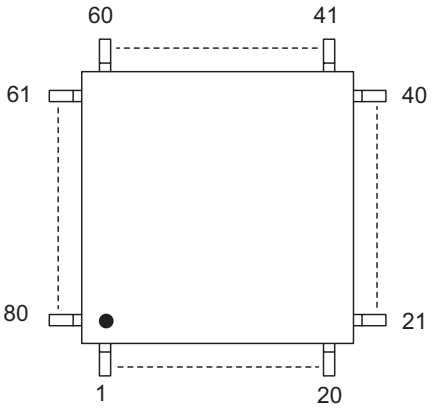



EL817A

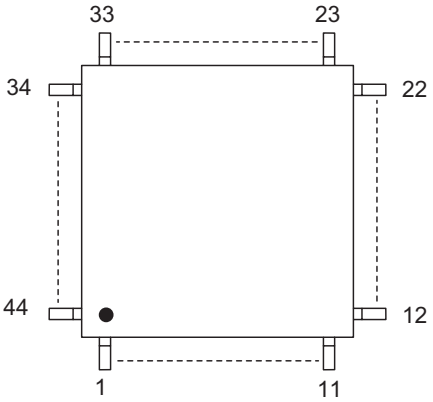



1: Anode
2: Cathode
3: Emitter
4: Collector

LA72648M-MPB-E




MSP3417G-QG-B8-V3




Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

JVC
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(No.YD088)

Printed in Japan
VPT

# PARTS LIST

# [HR-V525SEF]

* SAFETY PRECAUTION
  Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.
* BEWARE OF BOGUS PARTS
  Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.
* (x_) in a description column shows the number of the used part.

**Area Suffix**
EF --------- French Republic

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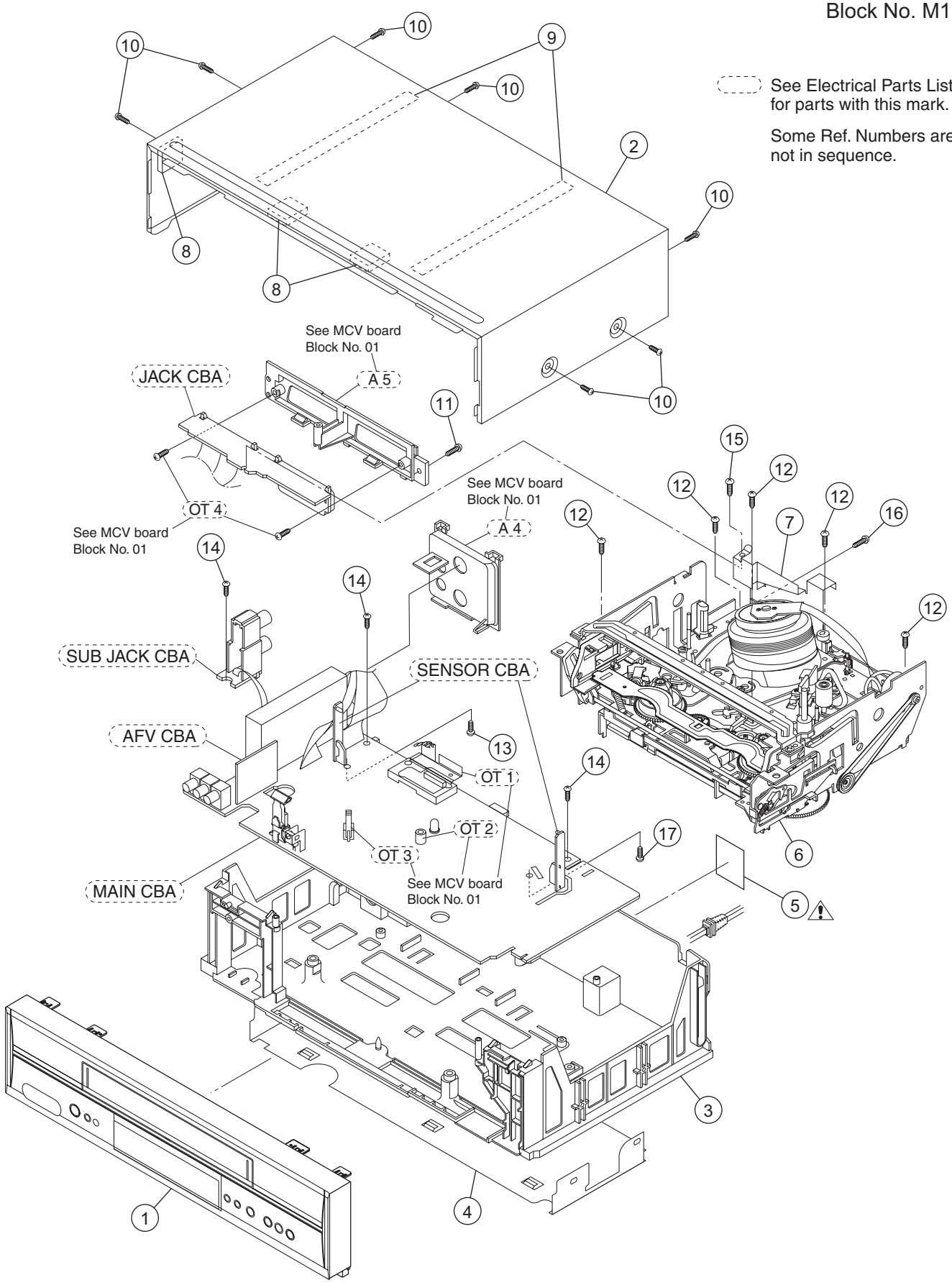
VHS mechanism assembly and parts list ---------- 3-4
Electrical parts list ---------- 3-9
Packing materials and accessories parts list ---------- 3-13

# Exploded view of general assembly and parts list

Block No. M1MM



# General assembly

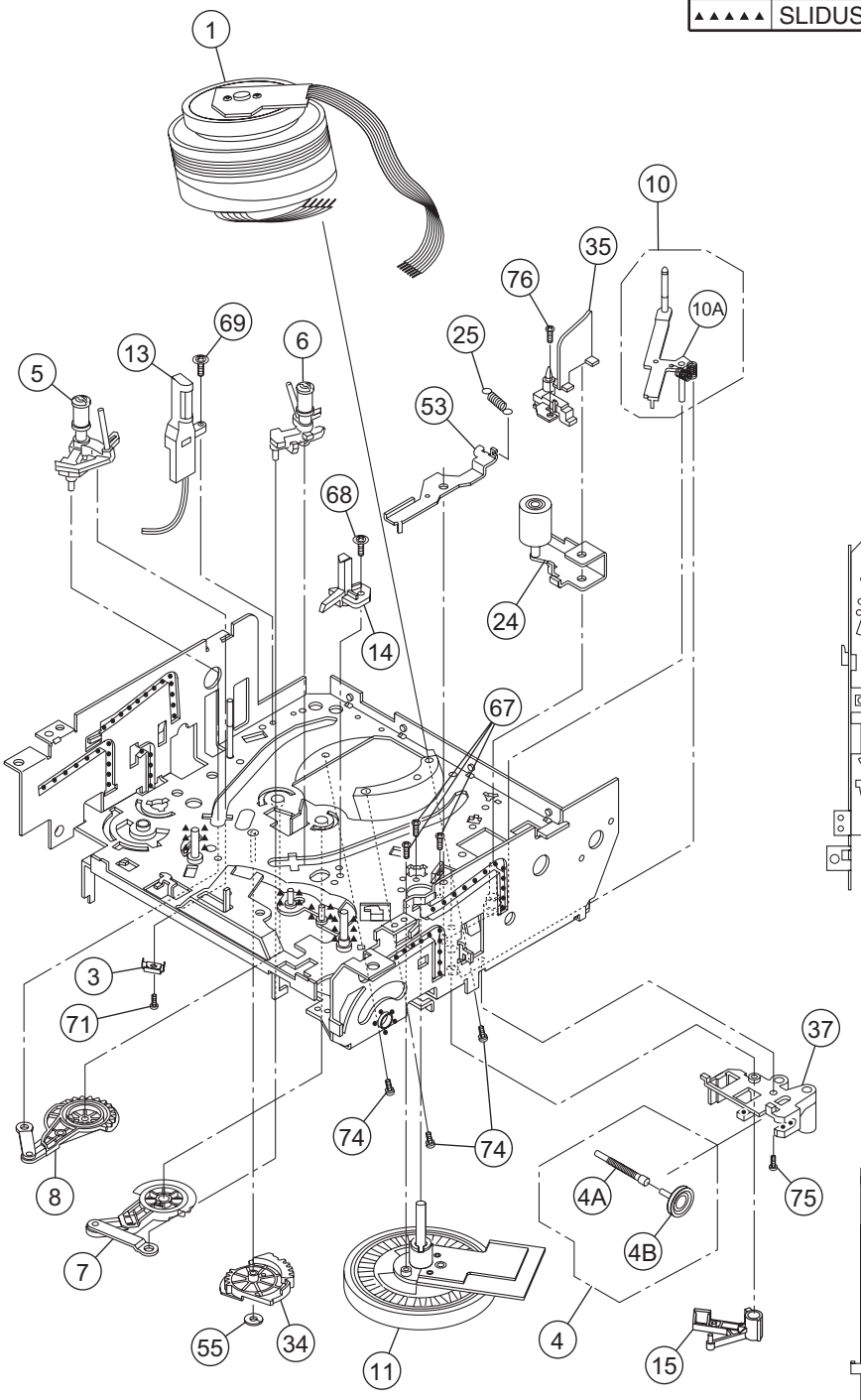
Block No. [M][1][M][M]

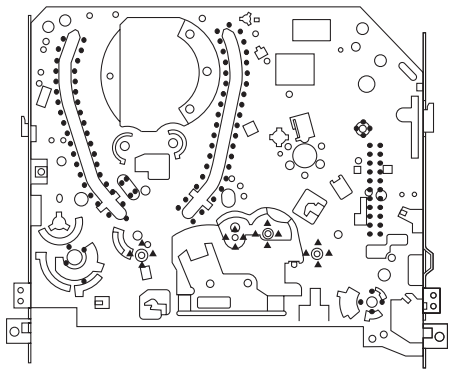
| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| 1 | FU-1VM221262 | FRONT ASSEMBLY | | |
| 2 | FU-0VM101267 | CASE TOP(ANTHRACITE) | | |
| 3 | FU-0VM000177 | CHASSIS | | |
| 4 | FU-1VM321769 | BOTTOM PANEL | | |
| ⚠ 5 | --------- | RATING LABEL | | |
| 6 | PTU96159 | DECK ASSEMBLY | Without cylinder assembly | |
| 7 | FU-0VM306638 | SHEILD CYLINDER | | |
| 8 | FU-0VM413251 | CUSHION | (x3) | |
| 9 | FU-0VM412906 | FIBER TOP CASE | (x2) | |
| 10 | FU-GBCP3100 | SCREW P-TIGHT | 3X10 BIND HEAD+(x7) | |
| 11 | FU-GBCP3100 | SCREW P-TIGHT | 3X10 BIND HEAD+ | |
| 12 | FU-GCJP3100 | SCREW P-TIGHT | M3*10 WASHERHEAD+(x5) | |
| 13 | FU-GBJS3060 | SCREW S-TIGHT | M3X6 BIND HEAD+ | |
| 14 | FU-GBJP3080 | P-TIGHT SCREW | M3X8 BIND HEAD+(x3) | |
| 15 | FU-GBJP3080 | P-TIGHT SCREW | M3X8 BIND HEAD+ | |
| 16 | FU-GBJS3050 | SCREW | M3X5 HEAD+ BIND S-TIGHT | |
| 17 | FU-GBCP3080 | SCREW P-TIGHT | M3X8 BIND HEAD+ | |

# VHS mechanism assembly and parts list

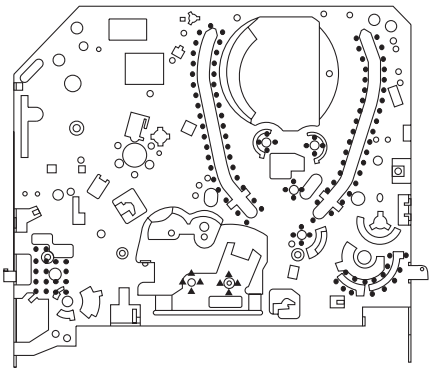
Block No. M2MM

| Mark | Description |
|---|---|
| ••••• | Floil G-684G or Multemp MH-D (Blue grease) |
| ▲▲▲▲▲ | SLIDUS OIL #150 |



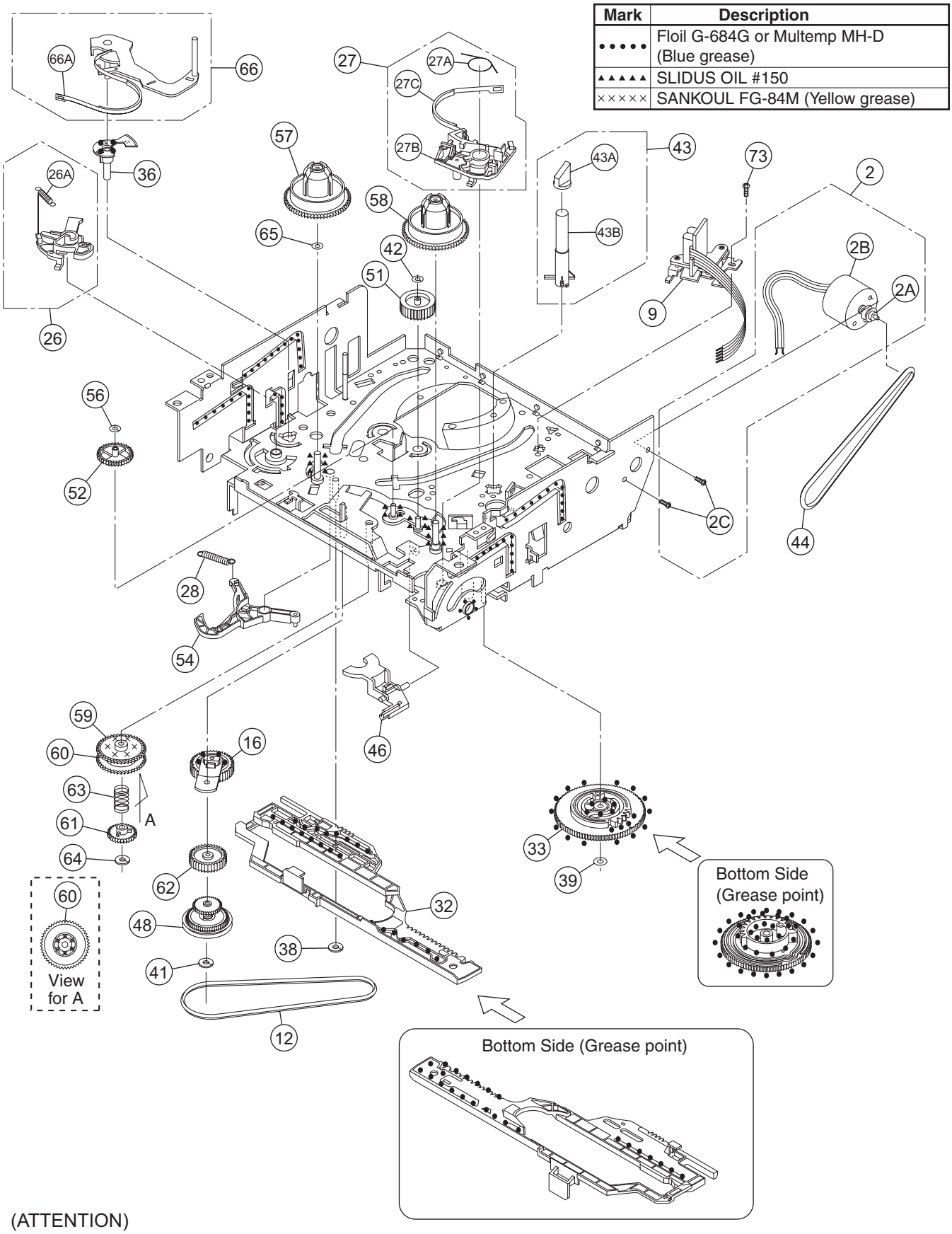



Chassis Assembly
Top View (Lubricating Point)



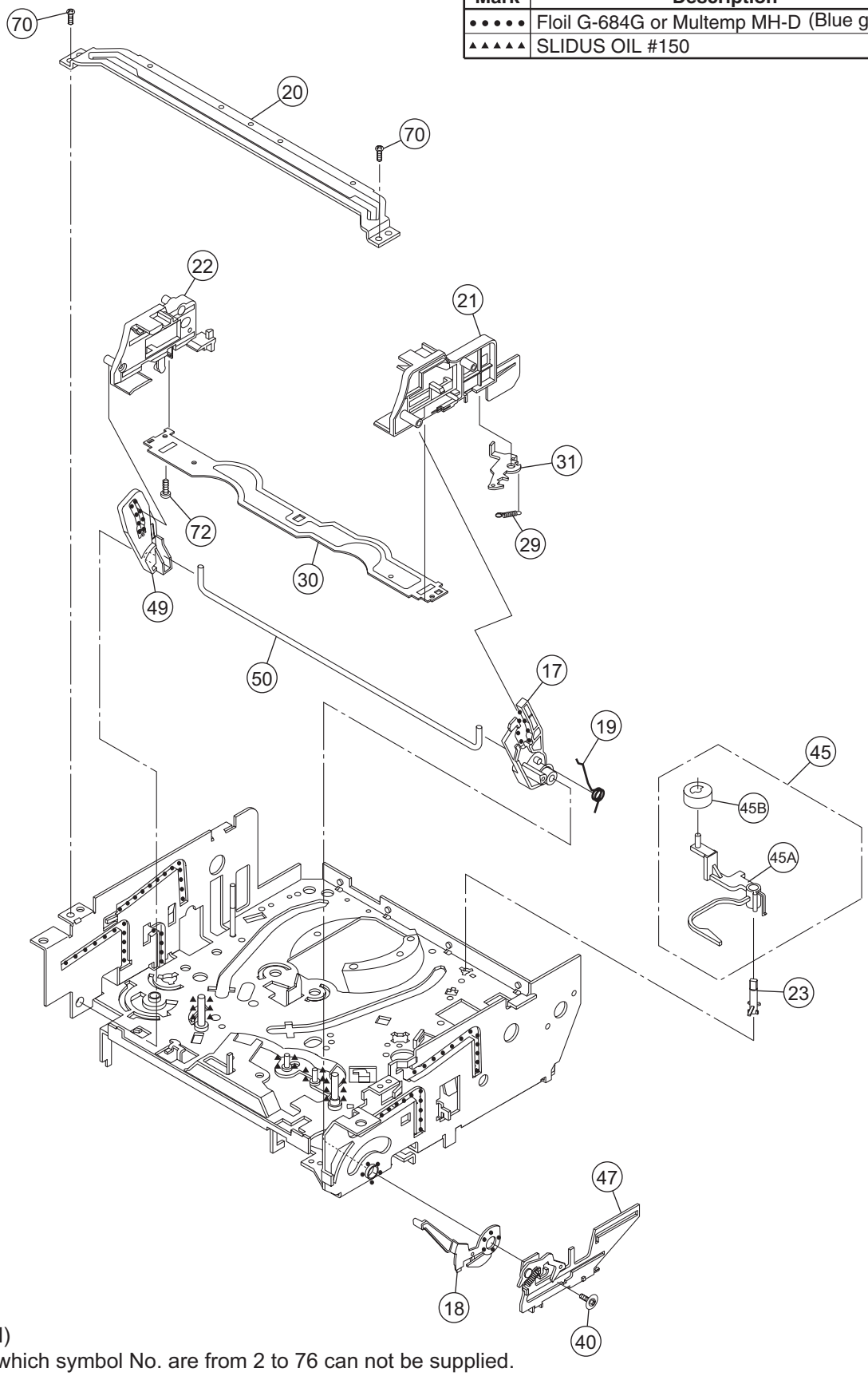
Chassis Assembly
Bottom View (Lubricating Point)

(ATTENTION)
These parts which symbol No. are from 2 to 76 can not be supplied.
When these parts must be exchanged, Please order the VHS mechanism assembly.(Page 3-2 Symbol No,6)




(ATTENTION)
These parts which symbol No. are from 2 to 76 can not be supplied.
When these parts must be exchanged, Please order the VHS mechanism assembly.(Page 3-2 Symbol No,6)

| Mark | Description |
|---|---|
| ••••• | Floil G-684G or Multemp MH-D (Blue grease) |
| ▲▲▲▲▲ | SLIDUS OIL #150 |




(ATTENTION)
These parts which symbol No. are from 2 to 76 can not be supplied.
When these parts must be exchanged, Please order the VHS mechanism assembly.(Page 3-2 Symbol No,6)

# VHS mechanism

Block No. [M][2][M][M]

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| 1 | FU-N236CCYL | CYLINDER ASSEMBLY | | |
| 2 | FU-1VSA12912 | LOADING MOTOR ASSEMBLY | | |
| 2A | FU-0VM403205A | MOTOR PULLEY | | |
| 2B | FU-MMDZB12MF003 | LOADING MOTOR | | |
| 2C | FU-CPJ39040 | SCREW SEMS | M2.6X4 PAN HEAD+(x2) | |
| 3 | FU-0VM416429 | SLIDE PLATE | | |
| 4 | FU-0VSA13501 | PULLEY ASSEMBLY(HI) | | |
| 4A | FU-0VM414091 | WORM | | |
| 4B | FU-0VM414330B | PULLEY | | |
| 5 | FU-1VSA12887 | MOVING GUIDE S P. | | |
| 6 | FU-1VSA12886 | MOVING GUIDE T P. | | |
| 7 | FU-1VSA12880 | LOADING ARM(TU) ASSEMBLY | | |
| 8 | FU-1VSA12879 | LOADING ARM(SP) ASSEMBLY | | |
| 9 | FU-1VSA12888 | AC HEAD ASSEMBLY | | |
| 10 | FU-1VSA12889 | TAPE GUIDE ARM ASSEMBLY | | |
| 10A | FU-0VM412555 | REV SPRING | | |
| 11 | FU-N9688CML | CAPSTAN MOTOR | | |
| 12 | FU-0VM411138 | CAP BELT | | |
| 13 | FU-DHVEC01AL007 | FE HEAD(MK12) | | |
| 14 | FU-0VM202870 | PRISM | | |
| 15 | FU-0VSA13447 | F BRAKE ASSEMBLY(HI) | | |
| 16 | FU-1VSA12903 | IDLER ASSEMBLY(HI) | | |
| 17 | FU-0VM203773 | C DRIVE LEVER(TU) | | |
| 18 | FU-0VM203751C | F DOOR OPENER | | |
| 19 | FU-0VM414145 | C DRIVE SPRING | | |
| 20 | FU-0VM304920 | GUIDE HOLDER A | | |
| 21 | FU-0VM101172F | SLIDER(TU) | | |
| 22 | FU-0VM101182K | SLIDER(SP) | | |
| 23 | FU-0VM411114 | CL POST | | |
| 24 | FU-1VSA12881 | PINCH ARM(A) ASSEMBLY | | |
| 25 | FU-0VM414644 | PINCH SPRING | | |
| 26 | FU-0VSA13655 | M BRAKE(SP) ASSEMBLY(HI) | | |
| 26A | FU-0VM414899 | S BRAKE SPRING(HI) | | |
| 27 | FU-0VSA13449 | M BRAKE(TU) ASSEMBLY(HI) | | |
| 27A | FU-0VM414943 | REV BRAKE SPG(HI) | | |
| 27B | FU-0VM203752E | BRAKE ARM(TU) | | |
| 27C | FU-0VM305724C | BAND BRAKE(TU) | | |
| 28 | FU-0VM414221G | TENSION SPG | | |
| 29 | FU-0VM411110 | LOCK LEVER SPRING | | |
| 30 | FU-1VM220271 | CASSETTE PLATE | | |
| 31 | FU-0VM414095 | LOCK LEVER | | |
| 32 | FU-0VM101352 | MODE LEVER(HI) | | |
| 33 | FU-0VM101176G | CAM GEAR(A)(HI) | | |
| 34 | FU-0VM204236 | MODE GEAR(LM) | | |
| 35 | FU-0VM305719 | C DOOR OPENER | | |
| 36 | FU-0VM305729C | T LEVER HOLDER | | |
| 37 | FU-0VM203767 | WORM HOLDER | | |
| 38 | FU-0VM410058 | REEL WASHER | MK9 5*2.1*0.5 | |
| 39 | FU-0VM402629A | P.S.W | F 6*2.55*0.5 | |
| 40 | FU-0VM411535B | SCREW RACK | | |
| 41 | FU-0VM410058 | REEL WASHER | MK9 5*2.1*0.5 | |
| 42 | FU-0VM408485A | P.S.W CUT | 1.6X4.0X0.5T | |
| 43 | FU-0VSA11012 | TG POST ASSEMBL | | |
| 43A | FU-0VM407664C | TG CAP | | |
| 43B | FU-0VM411108E | TG POST | | |
| 44 | FU-0VM412804 | LDG BELT | | |
| 45 | FU-0VSA11161 | CLEANER ASSEMBLY | | |
| 45A | FU-0VM304413 | CLEANER LEVER | | |
| 45B | FU-0VM410032C | CLEANER ROLLER | | |
| 46 | FU-0VM306183 | FF ARM(HI) | | |
| 47 | FU-1VSA11842 | RACK ASSEMBLY | | |
| 48 | FU-0VSA13450 | CLUTCH ASSEMBLY(HI) | | |
| 49 | FU-0VM203772 | C DRIVE LEVER(SP) | | |
| 50 | FU-0VM305762B | SLIDER SHAFT | | |
| 51 | FU-0VM305755 | M GEAR(HI) | | |
| 52 | FU-0VM305756 | SENSOR GEAR(HI) | | |
| 53 | FU-1VSA12891 | SLIDER ASSEMBLY | | |
| 54 | FU-0VM305728 | BT ARM | | |
| 55 | FU-0VM408485A | P.S.W CUT | 1.6X4.0X0.5T | |
| 56 | FU-0VM408485A | P.S.W CUT | 1.6X4.0X0.5T | |
| 57 | FU-0VM203436 | REEL S | | |
| 58 | FU-0VM202872C | REEL T | | |
| 59 | FU-0VM304440 | TR GEAR | | |
| 60 | FU-0VM305900 | TR GEAR | | |
| 61 | FU-0VM305743A | TR GEAR | | |
| 62 | FU-0VM305081 | CENTER GEAR | | |
| 63 | FU-0VM411187C | TR GEAR SPRING | | |
| 64 | FU-0VM414741 | CAM WASHER | | |
| 65 | FU-0VM413663 | PSW | | |

(ATTENTION)
These parts which symbol No. are from 2 to 76 can not be supplied.
When these parts must be exchanged, Please order the VHS mechanism assembly.(Page 3-2 Symbol No,6)

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| 66 | FU-1VSA12878 | TENSION LEVER ASSEMBLY | | |
| 66A | FU-1VM320582 | BAND BRAKE(SP) | | |
| 67 | FU-GPJB9060 | SCREW B-TIGHT | M2.6X6 PAN HEAD+(x3) | |
| 68 | FU-GCJS9080 | SCREW S-TIGHT | M2.6X8 WASHER HEAD+ | |
| 69 | FU-GCJS9080 | SCREW S-TIGHT | M2.6X8 WASHER HEAD+ | |
| 70 | FU-GBJS3060 | SCREW S-TIGHT | M3X6 BIND HEAD+(x2) | |
| 71 | FU-GBJBY040 | SCREW B-TIGHT | M2.3X4 BIND HEAD+ | |
| 72 | FU-GPJP2060 | SCREW P-TIGHT | M2X6 PAN HEAD+ | |
| 73 | FU-0VM410964A | AC HEAD SCREW | | |
| 74 | FU-CPJ39050 | SCREW SEMS | M2.6X5 PAN HEAD+(x3) | |
| 75 | FU-GBJS9060 | SCREW S-TIGHT | M2.6X6 BIND HEAD+ | |
| 76 | FU-SCJ39050 | SCREW | M2.6X5 WASHER HEAD+ | |



(ATTENTION)
These parts which symbol No. are from 2 to 76 can not be supplied.
When these parts must be exchanged, Please order the VHS mechanism assembly.(Page 3-2 Symbol No,6)

# Electrical parts list
## MCV board

Block No. [0][1]

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| PW1 | FU-1VSA12620 | MCV BOARD ASSY | | |
| ⚠ IC001 | FU-NPEA000EL817 | PHOTOCOUPLER | | |
| IC301 | FU-QSZBA0RSY020 | IC Y/C/A | | |
| IC370 | FU-QSZBA0TSY019 | IC SECAM | | |
| IC451 | FU-QSZBA0RSY033 | IC HIFI | | |
| IC501 | FU-QSZAB0RMB193 | SYSCON IC | | |
| IC503 | FU-NSZBA0TBG007 | IC | | |
| IC561 | FU-NSZBA0TG2008 | IC LED DRIVER | | |
| ⚠ Q001 | FU-QFWZ02SK3566 | FET | | |
| Q002 | FU-NQS5KTC3199P | TRANSISTOR | | |
| Q003 | FU-NQS5KTC3199P | TRANSISTOR | | |
| Q004 | FU-NQSYKTA1267P | TRANSISTOR | | |
| Q051 | FU-QQSZ0RN2204F | TRANSISTOR | | |
| Q052 | FU-NQSZKRC103MP | TRANSISTOR | | |
| Q053 | FU-NQSYKTC3199P | TRANSISTOR | | |
| Q054 | FU-NQSYKTC3205P | TRANSISTOR | | |
| Q055 | FU-NQS4KTA1266P | TRANSISTOR | | |
| Q056 | FU-NQSZ0KRA103M | RES. BUILT-IN TRANSISTOR | | |
| Q057 | FU-NQVYKTA1281P | TRANSISTOR | | |
| Q058 | FU-NQSZKRC103MP | TRANSISTOR | | |
| Q059 | FU-NQSZKRC103MP | TRANSISTOR | | |
| Q101 | FU-NQS4KTA1266P | TRANSISTOR | | |
| Q102 | FU-NQS4KTA1266P | TRANSISTOR | | |
| Q351 | FU-NQ1YKTA1504S | CHIP TRANSISTOR | | |
| Q352 | FU-NQSYKTC3199P | TRANSISTOR | | |
| Q401 | FU-NQS4KTA1266P | TRANSISTOR | | |
| Q402 | FU-NQSYKTC3203P | TRANSISTOR | | |
| Q403 | FU-NQSZ0KRA103M | RES. BUILT-IN TRANSISTOR | | |
| Q405 | FU-QQ2Z0RN1511F | CHIP TRANSISTOR | | |
| Q406 | FU-NQ1YKTC3875S | CHIP TRANSISTOR | | |
| Q451 | FU-NQ1ZKRC103SP | TRANSISTOR | | |
| Q501 | FU-NQS5KTC3199P | TRANSISTOR | | |
| Q503 | FU-NPWZT2046B12 | PHOTO TRANSISTOR | | |
| Q504 | FU-NPWZT2046B12 | PHOTO TRANSISTOR | | |
| Q505 | FU-NPWZT2046B12 | PHOTO TRANSISTOR | | |
| Q551 | FU-NQS5KTC3199P | TRANSISTOR | | |
| Q552 | FU-NQSZKRC103MP | TRANSISTOR | | |
| D001 | FU-NDQZ001N4005 | RECTIFIER DIODE | | |
| D002 | FU-NDQZ001N4005 | RECTIFIER DIODE | | |
| D003 | FU-NDQZ001N4005 | RECTIFIER DIODE | | |
| D004 | FU-NDQZ001N4005 | RECTIFIER DIODE | | |
| D005 | FU-NDQZ000BA159 | RECTIFIER DIODE | | |
| D006 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D007 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D008 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D009 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D011 | FU-NDQZ000BA158 | RECTIFIER DIODE | | |
| D012 | FU-NDQZ000FR202 | RECTIFIER DIODE | | |
| D013 | FU-NDQZ000FR202 | RECTIFIER DIODE | | |
| D014 | FU-NDQZ000SB340 | SCHOTTKY BARRIER DIODE | | |
| D015 | FU-NDTB00DZ18BS | ZENER DIODE | | |
| D018 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D019 | FU-NDTB0DZ6R8BS | ZENER DIODE | | |
| D021 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D051 | FU-NDQZ001N4005 | RECTIFIER DIODE | | |
| D052 | FU-NDQZ001N4005 | RECTIFIER DIODE | | |
| D053 | FU-NDQZ001N4005 | RECTIFIER DIODE | | |
| D056 | FU-NDTC0DZ5R6BS | ZENER DIODE | | |
| D057 | FU-NDTB00DZ10BS | ZENER DIODE | | |
| D058 | FU-NDTB00DZ18BS | ZENER DIODE | | |
| D101 | FU-NDTA00DZ11BS | ZENER DIODE | | |
| D102 | FU-NDTA00DZ11BS | ZENER DIODE | | |
| D103 | FU-NDTA00DZ11BS | ZENER DIODE | | |
| D105 | FU-NDTA00DZ11BS | ZENER DIODE | | |
| D153 | FU-NDTA00DZ11BS | ZENER DIODE | | |
| D154 | FU-NDTA00DZ11BS | ZENER DIODE | | |
| D155 | FU-NDTA00DZ11BS | ZENER DIODE | | |
| D156 | FU-NDTA00DZ11BS | ZENER DIODE | | |
| D301 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D370 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D501 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D502 | FU-NPZZM1E534A2 | LED | | |
| D553 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| D701 | FU-NDTD00DZ33BS | ZENER DIODE | | |
| ⚠ C002 | FU-CT2E683DC011 | METALIZED FILM CAP. | 0.068UF/250V K | |
| ⚠ C003 | FU-CCN2EMA0E222 | SAFTY CAP. | 2200PF/250V | |
| C004 | FU-CE2HMZXJH330 | ELECTROLYTIC CAP. | 33UF/400V M | |
| C005 | FU-CCD2JKP0B103 | CERAMIC CAP. | B K 0.01UF/500V | |
| C006 | FU-CCD3AKPSL560 | CERAMIC CAP. | SL K 56PF/1KV | |
| C007 | FU-CCA1JKT0B102 | CERAMIC CAP.(AX) | B K 1000PF/50V | |
| C008 | FU-CCA1CKT0X562 | CERAMIC CAP.(AX) | X K 5600PF/16V | |
| C010 | FU-CMA1JJP00223 | FILM CAP (P) | 0.022UF/50V J | |
| C011 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C012 | FU-CE1JMAVSL100 | ELECTROLYTIC CAP. | 10UF/50V M H7 | |
| C014 | FU-CE1GMASDL471 | CAP ALUMINUM ELECTOLYTIC | 470UF/35V M | |
| C015 | FU-CE1EMAVSL470 | ELECTROLYTIC CAP. | 47UF/25V M H7 | |
| C017 | FU-CE1CMASDL471 | CAP ALUMINUM ELECTOLYTIC | 470UF/16V M | |
| C018 | FU-CE1CMASDL101 | CAP ALUMINUM ELECTOLYTIC | 100UF/16V M | |
| C020 | FU-CE1CMASDL102 | CAP ALUMINUM ELECTOLYTIC | 1000UF/16V M | |
| C021 | FU-CE1AMASDL471 | CAP ALUMINUM ELECTOLYTIC | 470UF/10V M | |
| C025 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C026 | FU-CE1CMAVSL470 | ELECTROLYTIC CAP. | 47UF/16V M H7 | |
| C053 | FU-CE0KMASSL221 | ELECTROLYTIC CAP. | 220UF/6.3V M H7 | |
| C056 | FU-CHD1JK30B473 | CHIP CERAMIC CAP. | B K 0.047UF/50V | |
| C057 | FU-CHD1JJ3CH471 | CHIP CERAMIC CAP. | CH J 470PF/50V | |
| C060 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C061 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C101 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C102 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C103 | FU-CHD1JJ3CH471 | CHIP CERAMIC CAP. | CH J 470PF/50V | |
| C104 | FU-CHD1JJ3CH471 | CHIP CERAMIC CAP. | CH J 470PF/50V | |
| C105 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C107 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C108 | FU-CHD1JK30B102 | CHIP CERAMIC CAP. | B K 1000PF/50V | |
| C109 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C110 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C111 | FU-CHD1JJ3CH471 | CHIP CERAMIC CAP. | CH J 470PF/50V | |
| C112 | FU-CHD1JJ3CH471 | CHIP CERAMIC CAP. | CH J 470PF/50V | |
| C113 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C115 | FU-CE1CMAVSL101 | ELECTROLYTIC CAP. | 100UF/16V M H7 | |
| C116 | FU-CE0KMASDL471 | CAP ALUMINUM ELECTOLYTIC | 470UF/6.3V M | |
| C117 | FU-CE0KMASDL471 | CAP ALUMINUM ELECTOLYTIC | 470UF/6.3V M | |
| C157 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C158 | FU-CHD1JK30B102 | CHIP CERAMIC CAP. | B K 1000PF/50V | |
| C251 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C252 | FU-CHD1JK30B102 | CHIP CERAMIC CAP. | B K 1000PF/50V | |
| C253 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C254 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C302 | FU-CHD1JK30B223 | CHIP CERAMIC CAP. | B K 0.022UF/50V | |
| C303 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C304 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C305 | FU-CHD1CZ30F224 | CHIP CERAMIC CAP. | F Z 0.22UF/16V | |
| C307 | FU-CHD1JK30B473 | CHIP CERAMIC CAP. | B K 0.047UF/50V | |
| C308 | FU-CHD1JK30B223 | CHIP CERAMIC CAP. | B K 0.022UF/50V | |
| C309 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C310 | FU-CHD1JK30B473 | CHIP CERAMIC CAP. | B K 0.047UF/50V | |
| C312 | FU-CHD1JK30B822 | CHIP CERAMIC CAP. | B K 8200PF/50V | |
| C313 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C314 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C315 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C316 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C317 | FU-CE0KMAVSL470 | ELECTROLYTIC CAP. | 47UF/6.3V M H7 | |
| C318 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C319 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C320 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C321 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C322 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C323 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C324 | FU-CHD1JJ3CH680 | CHIP CERAMIC CAP. | CH J 68PF/50V | |
| C325 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C326 | FU-CHD1JJ3CH680 | CHIP CERAMIC CAP. | CH J 68PF/50V | |
| C327 | FU-CE1JMAVSLR47 | ELECTROLYTIC CAP. | 0.47UF/50V M H7 | |

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| C328 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C329 | FU-CHD1JJ3CH680 | CHIP CERAMIC CAP. | CH J 68PF/50V | |
| C331 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C332 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C333 | FU-CE1JMAVSLR47 | ELECTROLYTIC CAP. | 0.47UF/50V M H7 | |
| C334 | FU-CP1EMAVSB4R7 | ELECTROLYTIC CAP. | 4.7UF/25V M NP H7 | |
| C335 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C336 | FU-CHD1JJ3CH102 | CHIP CERAMIC CAP. | CH J 1000PF/50V | |
| C337 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C338 | FU-CE0KMAVSL101 | ELECTROLYTIC CAP. | 100UF/6.3V H7 | |
| C339 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C340 | FU-CHD1JJ3CH121 | CHIP CERAMIC CAP. | CH J 120PF/50V | |
| C341 | FU-CHD1JJ3CH221 | CHIP CERAMIC CAP. | CH J 220PF/50V | |
| C342 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C343 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C345 | FU-CHD1JJ3CH680 | CHIP CERAMIC CAP. | CH J 68PF/50V | |
| C346 | FU-CHD1JJ3CH680 | CHIP CERAMIC CAP. | CH J 68PF/50V | |
| C347 | FU-CHD1JD3CH100 | CHIP CERAMIC CAP. | CH D 10PF/50V | |
| C351 | FU-CE0KMAVSL221 | ELECTROLYTIC CAP. | 220UF/6.3V M H7 | |
| C352 | FU-CE1CMAVSL101 | ELECTROLYTIC CAP. | 100UF/16V M H7 | |
| C370 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C371 | FU-CHD1JK30B223 | CHIP CERAMIC CAP. | B K 0.022UF/50V | |
| C372 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C373 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C374 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C375 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C376 | FU-CHD1JK30B223 | CHIP CERAMIC CAP. | B K 0.022UF/50V | |
| C377 | FU-CCA1CMT0Y103 | CERAMIC CAP.(AX) | Y M 0.01UF/16V | |
| C378 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C379 | FU-CE1JMAVSLR47 | ELECTROLYTIC CAP. | 0.47UF/50V M H7 | |
| C381 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C382 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C383 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C384 | FU-CE1JMAVSL2R2 | ELECTROLYTIC CAP. | 2.2UF/50V M H7 | |
| C401 | FU-CE0KMAVSL470 | ELECTROLYTIC CAP. | 47UF/6.3V M H7 | |
| C402 | FU-CE0KMASSL221 | ELECTROLYTIC CAP. | 220UF/6.3V M H7 | |
| C403 | FU-CCD2AKS0B471 | CERAMIC CAP. | B K 470PF/100V | |
| C404 | FU-CMA1JJP00183 | FILM CAP.(P) | 0.018UF/50V J | |
| C411 | FU-CHD1JK30B102 | CHIP CERAMIC CAP. | B K 1000PF/50V | |
| C412 | FU-CHD1JK30B182 | CHIP CERAMIC CAP. | B K 1800PF/50V | |
| C414 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C415 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C416 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C417 | FU-CHD1JK30B223 | CHIP CERAMIC CAP. | B K 0.022UF/50V | |
| C418 | FU-CHD1JJ3CH330 | CHIP CERAMIC CAP. | CH J 33PF/50V | |
| C419 | FU-CHD1JK30B472 | CHIP CERAMIC CAP. | B K 4700PF/50V | |
| C421 | FU-CE0KMAVSL330 | ELECTROLYTIC CAP. | 33UF/6.3V M H7 | |
| C422 | FU-CE1EMAVSL4R7 | ELECTROLYTIC CAP. | 4.7UF/25V M H7 | |
| C424 | FU-CE0KMAVSL220 | ELECTROLYTIC CAP. | 22UF/6.3V M H7 | |
| C425 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C428 | FU-CHD1JJ3CH221 | CHIP CERAMIC CAP. | CH J 220PF/50V | |
| C430 | FU-CE0KMAVSL470 | ELECTROLYTIC CAP. | 47UF/6.3V M H7 | |
| C451 | FU-CE1CMAVSL470 | ELECTROLYTIC CAP. | 47UF/16V M H7 | |
| C452 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C453 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C454 | FU-CE1AMAVSL220 | ELECTROLYTIC CAP. | 22UF/10V M H7 | |
| C455 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C456 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C457 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C458 | FU-CE1EMAVSL4R7 | ELECTROLYTIC CAP. | 4.7UF/25V M H7 | |
| C459 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C460 | FU-CHD1JK30B472 | CHIP CERAMIC CAP. | B K 4700PF/50V | |
| C461 | FU-CE1AMAVSL220 | ELECTROLYTIC CAP. | 22UF/10V M H7 | |
| C462 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C463 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C464 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C465 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C466 | FU-CE0KMAVSL221 | ELECTROLYTIC CAP. | 220UF/6.3V M H7 | |
| C467 | FU-CE1AMAVSL220 | ELECTROLYTIC CAP. | 22UF/10V M H7 | |
| C468 | FU-CHD1JK30B472 | CHIP CERAMIC CAP. | B K 4700PF/50V | |
| C469 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C470 | FU-CE1EMAVSL4R7 | ELECTROLYTIC CAP. | 4.7UF/25V M H7 | |
| C471 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C472 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C473 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C474 | FU-CE0KMAVSL220 | ELECTROLYTIC CAP. | 22UF/6.3V M H7 | |
| C475 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C476 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| C477 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C478 | FU-CE1EMAVSL4R7 | ELECTROLYTIC CAP. | 4.7UF/25V M H7 | |
| C479 | FU-CE1EMAVSL4R7 | ELECTROLYTIC CAP. | 4.7UF/25V M H7 | |
| C480 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C482 | FU-CE1EMAVSL4R7 | ELECTROLYTIC CAP. | 4.7UF/25V M H7 | |
| C483 | FU-CE1EMAVSL4R7 | ELECTROLYTIC CAP. | 4.7UF/25V M H7 | |
| C484 | FU-CE1CMAVSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C485 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C486 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C489 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C501 | FU-CE0KMAVSL221 | ELECTROLYTIC CAP. | 220UF/6.3V M H7 | |
| C502 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C506 | FU-CCA1JKT0B101 | CERAMIC CAP.(AX) | B K 100PF/50V | |
| C508 | FU-CE1JMAVSL1R0 | ELECTROLYTIC CAP. | 1UF/50V M H7 | |
| C510 | FU-CE1AMAVSL220 | ELECTROLYTIC CAP. | 22UF/10V M H7 | |
| C511 | FU-CE0KMAVSL101 | ELECTROLYTIC CAP. | 100UF/6.3V H7 | |
| C512 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C513 | FU-CHD1JJ3CH220 | CHIP CERAMIC CAP. | CH J 22PF/50V | |
| C514 | FU-CHD1JJ3CH220 | CHIP CERAMIC CAP. | CH J 22PF/50V | |
| C515 | FU-CHD1JJ3CH180 | CHIP CERAMIC CAP. | CH J 18PF/50V | |
| C516 | FU-CHD1JJ3CH180 | CHIP CERAMIC CAP. | CH J 18PF/50V | |
| C517 | FU-CHD1JK30B472 | CHIP CERAMIC CAP. | B K 4700PF/50V | |
| C518 | FU-CHD1JK30B473 | CHIP CERAMIC CAP. | B K 0.047UF/50V | |
| C519 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C520 | FU-CHD1JJ3CH101 | CHIP CERAMIC CAP. | CH J 100PF/50V | |
| C521 | FU-CHD1JJ3CH561 | CHIP CERAMIC CAP. | CH J 560PF/50V | |
| C522 | FU-CE0KMASSL220 | ELECTROLYTIC CAP. | 22UF/6.3V M H7 | |
| C523 | FU-CHD1JK30B102 | CHIP CERAMIC CAP. | B K 1000PF/50V | |
| C524 | FU-CHD1JJ3CH331 | CHIP CERAMIC CAP. | CH J 330PF/50V | |
| C526 | FU-CHD1JK30B472 | CHIP CERAMIC CAP. | B K 4700PF/50V | |
| C527 | FU-CE0KMASSL220 | ELECTROLYTIC CAP. | 22UF/6.3V M H7 | |
| C528 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C530 | FU-CCA1EZTFZ223 | CERAMIC CAP. | F Z 0.022UF/25V | |
| C531 | FU-CCA1CMT0Y103 | CERAMIC CAP. | Y M 0.01UF/16V | |
| C532 | FU-CE0KMASSL220 | ELECTROLYTIC CAP. | 22UF/6.3V M H7 | |
| C533 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C535 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C538 | FU-CHD1JK30B223 | CHIP CERAMIC CAP. | B K 0.022UF/50V | |
| C540 | FU-CE0KMASDL471 | CAP ALUMINUM ELECTOLYTIC | 470UF/6.3V M | |
| C561 | FU-CHD1JK30B223 | CHIP CERAMIC CAP. | B K 0.022UF/50V | |
| C562 | FU-CE0KMASSL331 | ELECTROLYTIC CAP. | 330UF/6.3V M H7 | |
| C563 | FU-CHD1AZB0F105 | CHIP CERAMIC CAP. | F Z 1UF/10V | |
| C564 | FU-CHD1JJ3CH101 | CHIP CERAMIC CAP. | CH J 100PF/50V | |
| C567 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C702 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C704 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C706 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C708 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C716 | FU-CHD1CZ30F224 | CHIP CERAMIC CAP. | F Z 0.22UF/16V | |
| C717 | FU-CHD1CZ30F224 | CHIP CERAMIC CAP. | F Z 0.22UF/16V | |
| C751 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C752 | FU-CHD1JK30B222 | CHIP CERAMIC CAP. | B K 2200PF/50V | |
| C756 | FU-CHD1JJ3CH471 | CHIP CERAMIC CAP. | CH J 470PF/50V | |
| C757 | FU-CHD1JJ3CH471 | CHIP CERAMIC CAP. | CH J 470PF/50V | |
| C851 | FU-CHD1JJ3CH220 | CHIP CERAMIC CAP. | CH J 22PF/50V | |
| C852 | FU-CHD1JJ3CH220 | CHIP CERAMIC CAP. | CH J 22PF/50V | |
| C853 | FU-CHD1JK30B472 | CHIP CERAMIC CAP. | B K 4700PF/50V | |
| C854 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C855 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C856 | FU-CHD1JJ3CH181 | CHIP CERAMIC CAP. | CH J 180PF/50V | |
| C858 | FU-CHD1JJ3CH561 | CHIP CERAMIC CAP. | CH J 560PF/50V | |
| C859 | FU-CE0KMAVSL470 | ELECTROLYTIC CAP. | 47UF/6.3V M H7 | |
| C862 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| | | | | |
| R002 | FU-RN01154ZU001 | METAL OXIDE FILM RES. | 1W J 150K Ω | |
| R003 | FU-RCX4JATZ0105 | CARBON RES. | 1/4W J 1M Ω | |
| R004 | FU-RCX4JATZ0105 | CARBON RES. | 1/4W J 1M Ω | |
| R005 | FU-RCX6GATZ0681 | CARBON RES. | 1/6W G 680 Ω | |
| R006 | FU-RN011R8ZU001 | METAL OXIDE FILM RES. | 1W J 1.8 Ω | |
| R007 | FU-RCX6JATZ0223 | CARBON RES. | 1/6W J 22K Ω | |
| R008 | FU-RCX6JATZ0104 | CARBON RES. | 1/6W J 100K Ω | |
| R009 | FU-RCX6GATZ0332 | CARBON RES. | 1/6W G 3.3K Ω | |
| R011 | FU-RCX4JATZ0394 | CARBON RES. | 1/4W J 390K Ω | |
| R012 | FU-RCX4JATZ0394 | CARBON RES. | 1/4W J 390K Ω | |
| R013 | FU-RCX6JATZ0474 | CARBON RES. | 1/6W J 470K Ω | |
| R014 | FU-RCX6JATZ0104 | CARBON RES. | 1/6W J 100K Ω | |
| R015 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R016 | FU-RCX6JATZ0104 | CARBON RES. | 1/6W J 100K Ω | |

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| R017 | FU-RRXAJR5Z0224 | CHIP RES. | 1/10W J 220K Ω | |
| R018 | FU-RRXAJR5Z0223 | CHIP RES. | 1/10W J 22K Ω | |
| R021 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R022 | FU-RRXAJR5Z0472 | CHIP RES. | 1/10W J 4.7K Ω | |
| R023 | FU-RRXAFR5H0222 | CHIP RES. | 1/10W F 2.2K Ω | |
| R024 | FU-RRXAJR5Z0333 | CHIP RES. | 1/10W J 33K Ω | |
| R025 | FU-RRXAFR5H0332 | CHIP RES. | 1/10W F 3.3K Ω | |
| R026 | FU-RRXAJR5Z0223 | CHIP RES. | 1/10W J 22K Ω | |
| R027 | FU-RCX6JATZ0102 | CARBON RES. | 1/6W J 1K Ω | |
| R028 | FU-RCX4JATZ0105 | CARBON RES. | 1/4W J 1M Ω | |
| R030 | FU-RRXAFR5H0222 | CHIP RES. | 1/10W F 2.2K Ω | |
| R031 | FU-RRXAJR5Z0563 | CHIP RES. | 1/10W J 56K Ω | |
| R032 | FU-RRXAJR5Z0182 | CHIP RES. | 1/10W J 1.8K Ω | |
| R054 | FU-RRXAJR5Z0181 | CHIP RES. | 1/10W J 180 Ω | |
| R058 | FU-RCX6JATZ0821 | CARBON RES. | 1/6W J 820 Ω | |
| R060 | FU-RCX6JATZ0272 | CARBON RES. | 1/6W J 2.7K Ω | |
| R061 | FU-RRXAJR5Z0223 | CHIP RES. | 1/10W J 22K Ω | |
| R062 | FU-RCX6JATZ0103 | CARBON RES. | 1/6W J 10K Ω | |
| R063 | FU-RCX4JATZ0122 | CARBON RES. | 1/4W J 1.2K Ω | |
| R064 | FU-RCX4JATZ0122 | CARBON RES. | 1/4W J 1.2K Ω | |
| R065 | FU-RCX4JATZ0122 | CARBON RES. | 1/4W J 1.2K Ω | |
| R066 | FU-RRXAJR5Z0473 | CHIP RES. | 1/10W J 47K Ω | |
| R067 | FU-RCX4JATZ0681 | CARBON RES. | 1/4W J 680 Ω | |
| R068 | FU-RCX4JATZ0681 | CARBON RES. | 1/4W J 680 Ω | |
| R071 | FU-RCX6JATZ0392 | CARBON RES. | 1/6W J 3.9K Ω | |
| R073 | FU-RCX6JATZ01R0 | CARBON RES. | 1/6W J 1 Ω | |
| R101 | FU-RCX4JATZ0821 | CARBON RES. | 1/4W J 820 Ω | |
| R103 | FU-RCX4JATZ0821 | CARBON RES. | 1/4W J 820 Ω | |
| R104 | FU-RCX6JATZ0472 | CARBON RES. | 1/6W J 4.7K Ω | |
| R106 | FU-RCX6JATZ0472 | CARBON RES. | 1/6W J 4.7K Ω | |
| R108 | FU-RCX4JATZ0680 | CARBON RES. | 1/4W J 68 Ω | |
| R109 | FU-RRXAJR5Z0750 | CHIP RES. | 1/10W J 75 Ω | |
| R110 | FU-RCX4JATZ0821 | CARBON RES. | 1/4W J 820 Ω | |
| R112 | FU-RCX4JATZ0821 | CARBON RES. | 1/4W J 820 Ω | |
| R113 | FU-RCX6JATZ0472 | CARBON RES. | 1/6W J 4.7K Ω | |
| R115 | FU-RCX6JATZ0472 | CARBON RES. | 1/6W J 4.7K Ω | |
| R116 | FU-RCX6JATZ0153 | CARBON RES. | 1/6W J 15K Ω | |
| R117 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R118 | FU-RCX4JATZ0680 | CARBON RES. | 1/4W J 68 Ω | |
| R119 | FU-RRXAJR5Z0750 | CHIP RES. | 1/10W J 75 Ω | |
| R120 | FU-RCX6JATZ0681 | CARBON RES. | 1/6W J 680 Ω | |
| R123 | FU-RRXAJR5Z0221 | CHIP RES. | 1/10W J 220 Ω | |
| R125 | FU-RCX6JATZ0681 | CARBON RES. | 1/6W J 680 Ω | |
| R126 | FU-RRXAJR5Z0221 | CHIP RES. | 1/10W J 220 Ω | |
| R127 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R251 | FU-RRXAJR5Z0222 | CHIP RES. | 1/10W J 2.2K Ω | |
| R252 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R301 | FU-RRXAJR5Z0122 | CHIP RES. | 1/10W J 1.2K Ω | |
| R302 | FU-RRXAJR5Z0822 | CHIP RES. | 1/10W J 8.2K Ω | |
| R305 | FU-RRXAJR5Z0392 | CHIP RES. | 1/10W J 3.9K Ω | |
| R307 | FU-RRXAJR5Z0472 | CHIP RES. | 1/10W J 4.7K Ω | |
| R308 | FU-RRXAJR5Z0682 | CHIP RES. | 1/10W J 6.8K Ω | |
| R309 | FU-RRXAJR5Z0101 | CHIP RES. | 1/10W J 100 Ω | |
| R310 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R311 | FU-RRXAJR5Z0183 | CHIP RES. | 1/10W J 18K Ω | |
| R312 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R313 | FU-RRXAJR5Z0183 | CHIP RES. | 1/10W J 18K Ω | |
| R315 | FU-RRXAJR5Z0222 | CHIP RES. | 1/10W J 2.2K Ω | |
| R316 | FU-RRXAJR5Z0682 | CHIP RES. | 1/10W J 6.8K Ω | |
| R317 | FU-RRXAJR5Z0122 | CHIP RES. | 1/10W J 1.2K Ω | |
| R318 | FU-RRXAJR5Z0472 | CHIP RES. | 1/10W J 4.7K Ω | |
| R319 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R320 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R321 | FU-RCX6JATZ0330 | CARBON RES. | 1/6W J 33 Ω | |
| R322 | FU-RRXAJR5Z0750 | CHIP RES. | 1/10W J 75 Ω | |
| R323 | FU-RCX6JATZ0330 | CARBON RES. | 1/6W J 33 Ω | |
| R324 | FU-RRXAJR5Z0473 | CHIP RES. | 1/10W J 47K Ω | |
| R325 | FU-RRXAJR5Z0330 | CHIP RES. | 1/10W J 33 Ω | |
| R326 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R330 | FU-RRXAJR5Z0565 | CHIP RES. | 1/10W J 5.6M Ω | |
| R331 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R333 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R334 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R351 | FU-RRXAJR5Z0151 | CHIP RES. | 1/10W J 150 Ω | |
| R352 | FU-RRXAJR5Z0151 | CHIP RES. | 1/10W J 150 Ω | |
| R355 | FU-RCX4JATZ0681 | CARBON RES. | 1/4W J 680 Ω | |
| R357 | FU-RRXAJR5Z0221 | CHIP RES. | 1/10W J 220 Ω | |
| R360 | FU-RRXAJR5Z0182 | CHIP RES. | 1/10W J 1.8K Ω | |

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| R361 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R370 | FU-RRXAJR5Z0272 | CHIP RES. | 1/10W J 2.7K Ω | |
| R371 | FU-RCX6JATZ0562 | CARBON RES. | 1/6W J 5.6K Ω | |
| R372 | FU-RRXAJR5Z0392 | CHIP RES. | 1/10W J 3.9K Ω | |
| R401 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R402 | FU-RRXAJR5Z0223 | CHIP RES. | 1/10W J 22K Ω | |
| R403 | FU-RRXAJR5Z0473 | CHIP RES. | 1/10W J 47K Ω | |
| R404 | FU-RCX6JATZ0101 | CARBON RES. | 1/6W J 100 Ω | |
| R407 | FU-RCX4JATZ0821 | CARBON RES. | 1/4W J 820 Ω | |
| R408 | FU-RRXAJR5Z0123 | CHIP RES. | 1/10W J 12K Ω | |
| R409 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R411 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R412 | FU-RRXAJR5Z0273 | CHIP RES. | 1/10W J 27K Ω | |
| R413 | FU-RRXAJR5Z0334 | CHIP RES. | 1/10W J 330K Ω | |
| R414 | FU-RRXAJR5Z0121 | CHIP RES. | 1/10W J 120 Ω | |
| R415 | FU-RRXAJR5Z0123 | CHIP RES. | 1/10W J 12K Ω | |
| R416 | FU-RRXAJR5Z0182 | CHIP RES. | 1/10W J 1.8K Ω | |
| R417 | FU-RRXAJR5Z0561 | CHIP RES. | 1/10W J 560 Ω | |
| R418 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R421 | FU-RRXAJR5Z0123 | CHIP RES. | 1/10W J 12K Ω | |
| R422 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R425 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R426 | FU-RRXAJR5Z0472 | CHIP RES. | 1/10W J 4.7K Ω | |
| R429 | FU-RRXAJR5Z0222 | CHIP RES. | 1/10W J 2.2K Ω | |
| R430 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R431 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R451 | FU-RRXAJR5Z0822 | CHIP RES. | 1/10W J 8.2K Ω | |
| R452 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R453 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R454 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R455 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R456 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R457 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R458 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R459 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R460 | FU-RRXAJR5Z0471 | CHIP RES. | 1/10W J 470 Ω | |
| R461 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R462 | FU-RRXAJR5Z0272 | CHIP RES. | 1/10W J 2.7K Ω | |
| R463 | FU-RRXAJR5Z0822 | CHIP RES. | 1/10W J 8.2K Ω | |
| R464 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R465 | FU-RRXAJR5Z0822 | CHIP RES. | 1/10W J 8.2K Ω | |
| R466 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R467 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R468 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R469 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R470 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R471 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R472 | FU-RRXAJR5Z0151 | CHIP RES. | 1/10W J 150 Ω | |
| R473 | FU-RRXAJR5Z0151 | CHIP RES. | 1/10W J 150 Ω | |
| R474 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R476 | FU-RRXAJR5Z0330 | CHIP RES. | 1/10W J 33 Ω | |
| R477 | FU-RRXAJR5Z0330 | CHIP RES. | 1/10W J 33 Ω | |
| R478 | FU-RRXAJR5Z0223 | CHIP RES. | 1/10W J 22K Ω | |
| R479 | FU-RRXAJR5Z0682 | CHIP RES. | 1/10W J 6.8K Ω | |
| R480 | FU-RRXAJR5Z0101 | CHIP RES. | 1/10W J 100 Ω | |
| R481 | FU-RRXAJR5Z0101 | CHIP RES. | 1/10W J 100 Ω | |
| R501 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R502 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R503 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R504 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R505 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R506 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R509 | FU-RRXAJR5Z0472 | CHIP RES. | 1/10W J 4.7K Ω | |
| R511 | FU-RRXAJR5Z0104 | CHIP RES. | 1/10W J 100K Ω | |
| R513 | FU-RRXAJR5Z0222 | CHIP RES. | 1/10W J 2.2K Ω | |
| R514 | FU-RRXAJR5Z0821 | CHIP RES. | 1/10W J 820 Ω | |
| R516 | FU-RRXAJR5Z0334 | CHIP RES. | 1/10W J 330K Ω | |
| R517 | FU-RRXAJR5Z0561 | CHIP RES. | 1/10W J 560 Ω | |
| R518 | FU-RRXAJR5Z0471 | CHIP RES. | 1/10W J 470 Ω | |
| R520 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R521 | FU-RRXAJR5Z0224 | CHIP RES. | 1/10W J 220K Ω | |
| R522 | FU-RRXAJR5Z0393 | CHIP RES. | 1/10W J 39K Ω | |
| R523 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R524 | FU-RRXAJR5Z0562 | CHIP RES. | 1/10W J 5.6K Ω | |
| R525 | FU-RRXAJR5Z0152 | CHIP RES. | 1/10W J 1.5K Ω | |
| R526 | FU-RRXAJR5Z0182 | CHIP RES. | 1/10W J 1.8K Ω | |
| R527 | FU-RRXAJR5Z0681 | CHIP RES. | 1/10W J 680 Ω | |
| R528 | FU-RRXAJR5Z0183 | CHIP RES. | 1/10W J 18K Ω | |

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| R529 | FU-RCX4JATZ0271 | CARBON RES. | 1/4W J 270 Ω | |
| R530 | FU-RRXAJR5Z0181 | CHIP RES. | 1/10W J 180 Ω | |
| R531 | FU-RRXAJR5Z0683 | CHIP RES. | 1/10W J 68K Ω | |
| R533 | FU-RRXAJR5Z0333 | CHIP RES. | 1/10W J 33K Ω | |
| R534 | FU-RCX6GATZ0362 | CARBON RES. | 1/6W G 3.6K Ω | |
| R535 | FU-RCX6GATZ0103 | CARBON RES. | 1/6W G 10K Ω | |
| R536 | FU-RCX6GATZ0471 | CARBON RES. | 1/6W G 470 Ω | |
| R537 | FU-RCX6GATZ0223 | CARBON RES. | 1/6W G 22K Ω | |
| R538 | FU-RCX6GATZ0152 | CARBON RES. | 1/6W G 1.5K Ω | |
| R539 | FU-RCX6GATZ0472 | CARBON RES. | 1/6W G 4.7K Ω | |
| R540 | FU-RRXAJR5Z0394 | CHIP RES. | 1/10W J 390K Ω | |
| R541 | FU-RRXAJR5Z0394 | CHIP RES. | 1/10W J 390K Ω | |
| R542 | FU-RRXAJR5Z0182 | CHIP RES. | 1/10W J 1.8K Ω | |
| R543 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R544 | FU-RRXAJR5Z0272 | CHIP RES. | 1/10W J 2.7K Ω | |
| R545 | FU-RRXAJR5Z0222 | CHIP RES. | 1/10W J 2.2K Ω | |
| R546 | FU-RRXAJR5Z0123 | CHIP RES. | 1/10W J 12K Ω | |
| R547 | FU-RRXAJR5Z0182 | CHIP RES. | 1/10W J 1.8K Ω | |
| R548 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R549 | FU-RRXAJR5Z0122 | CHIP RES. | 1/10W J 1.2K Ω | |
| R551 | FU-RRXAJR5Z0101 | CHIP RES. | 1/10W J 100 Ω | |
| R552 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R553 | FU-RCX4JATZ0821 | CARBON RES. | 1/4W J 820 Ω | |
| R566 | FU-RRXAJR5Z0563 | CHIP RES. | 1/10W J 56K Ω | |
| R601 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R604 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R605 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R611 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R613 | FU-RRXAJR5Z0103 | CHIP RES. | 1/10W J 10K Ω | |
| R701 | FU-RCX6JATZ0182 | CARBON RES. | 1/6W J 1.8K Ω | |
| R702 | FU-RCX6JATZ0102 | CARBON RES. | 1/6W J 1K Ω | |
| R703 | FU-RCX6JATZ0102 | CARBON RES. | 1/6W J 1K Ω | |
| R706 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R751 | FU-RRXAJR5Z0821 | CHIP RES. | 1/10W J 820 Ω | |
| R752 | FU-RRXAJR5Z0821 | CHIP RES. | 1/10W J 820 Ω | |
| R756 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R757 | FU-RRXAJR5Z0750 | CHIP RES. | 1/10W J 75 Ω | |
| R758 | FU-RRXAJR5Z0472 | CHIP RES. | 1/10W J 4.7K Ω | |
| R759 | FU-RRXAJR5Z0472 | CHIP RES. | 1/10W J 4.7K Ω | |
| R851 | FU-RRXAJR5Z0152 | CHIP RES. | 1/10W J 1.5K Ω | |
| R852 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R853 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| VR501 | FU-VRCB104HH014 | CARBON P.O.T. | | |
| ⚠ L001 | FU-1VSA12574 | BEAD CORE ASSEMBLY | | |
| L002 | FU-1VSA12575 | BEAD CORE ASSEMBLY | | |
| ⚠ L003 | FU-LLBG00ZTU022 | LINE FILTER | 56MH | |
| L009 | FU-LLBD00PKV022 | CHOKE COIL | 47UH | |
| L010 | FU-LLBD00PKV022 | CHOKE COIL | 47UH | |
| L012 | FU-LLARJCSTU101 | INDUCTOR | | |
| L101 | FU-1VSA12574 | BEAD CORE ASSEMBLY | | |
| L102 | FU-1VSA12574 | BEAD CORE ASSEMBLY | | |
| L251 | FU-LLAXKATTU5R6 | INDUCTOR | | |
| L301 | FU-LLAXKATTU101 | INDUCTOR | (100UH K) | |
| L403 | FU-LLARKBSTU470 | INDUCTOR | | |
| L451 | FU-LLARKBSTU470 | INDUCTOR | | |
| L452 | FU-LLARKBSTU270 | INDUCTOR | | |
| L501 | FU-LLAXKATTU101 | INDUCTOR | (100UH K) | |
| L561 | FU-LLAXKATTU680 | INDUCTOR | | |
| L562 | FU-LLAXKATTU560 | INDUCTOR | | |
| L851 | FU-LLAXKATTU1R8 | INDUCTOR | | |
| ⚠ T001 | FU-LTT00EPXB024 | PULSE TRANS | | |
| A4 | FU-0VM203840 | JACK BOARD(U27 FTZ) | | |
| A5 | FU-0VM203835 | JACK BOARD(2-21P) | | |
| ⚠ AC001 | FU-WAE0172LW012 | AC CORD | | |
| CN701 | FU-HK47TAFV | AFV PCB ASSEMBLY | | |
| ⚠ F001 | FU-PAGC20BW3162 | FUSE | T1.6AL/250V | |
| FH001 | FU-XH01Z00LY002 | FUSE HOLDER | | |
| FH002 | FU-XH01Z00LY002 | FUSE HOLDER | | |
| FP562 | FU-NP8Z4212003A | LED DISPLAY | | |
| J902 | FU-1VSA12575 | BEAD CORE ASSEMBLY | | |
| JK101 | FU-JXGL210LY007 | RGB CONNECTOR | | |
| JK102 | FU-JXGL210LY007 | RGB CONNECTOR | | |
| JK751 | FU-JXRL020LY121 | RCA JACK 2P | | |
| JK756 | FU-JXRL010LY142 | RCA JACK | | |
| JK757 | FU-JXRL010LY138 | RCA JACK | | |
| JK758 | FU-JYRL010LY027 | RCA JACK | | |

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| JW001 | FU-WX1HC460-002 | FLAT CABLE | | |
| JW002 | FU-WX1HC460-002 | FLAT CABLE | | |
| JW003 | FU-WX1HE480-001 | FLAT CABLE 3P | | |
| OT1 | FU-0VM416072 | SHIELD ASSEMBLY | | |
| OT2 | FU-0VM409508 | BUSH LED(F) | | |
| OT3 | FU-0VM304573 | ROHM HOLDER | | |
| OT4 | FU-GCJP3100 | SCREW P-TIGHT | M3*10 WASHERHEAD+ | |
| PS503 | FU-QPWZP1302C70 | PHOTO INTERRUPTER | | |
| RS501 | FU-USESJRSUNT03 | REMOTE RECEIVER | | |
| SW501 | FU-SST0101HH013 | TACT SWITCH | | |
| SW502 | FU-SST0101HH013 | TACT SWITCH | | |
| SW503 | FU-SST0101HH013 | TACT SWITCH | | |
| SW504 | FU-SST0101HH013 | TACT SWITCH | | |
| SW505 | FU-SST0101HH013 | TACT SWITCH | | |
| SW506 | FU-SSC0101MCE03 | LEAF SWITCH | | |
| SW507 | FU-SSR0106KB003 | ROTARY MODE SWITCH | | |
| SW509 | FU-SST0101HH013 | TACT SWITCH | | |
| SW510 | FU-SST0101HH013 | TACT SWITCH | | |
| SW511 | FU-SST0101HH013 | TACT SWITCH | | |
| SW512 | FU-SST0101HH013 | TACT SWITCH | | |
| TU701 | FU-UTUNPSLAL004 | TUNER UNIT | | |
| X301 | FU-FXC445LLN004 | XTAL | 4.433619MHZ | |
| X501 | FU-FXD126LCHE01 | QUARTS CRYSTAL | 12.000000MHZ | |
| X502 | FU-FXC323LQUA02 | XTAL | | |

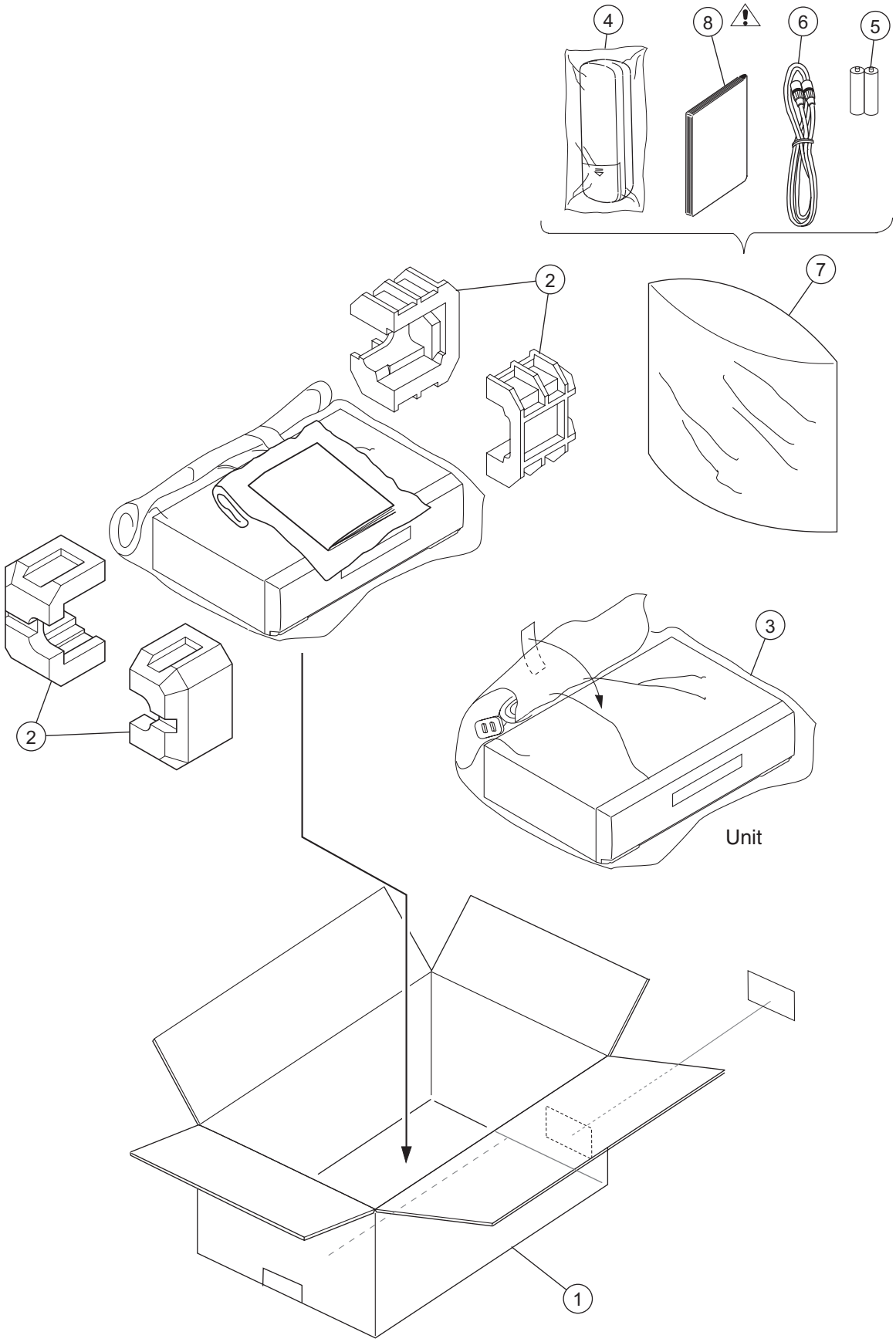
## AFV board

Block No. [0][2]

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| PW1 | FU-1VSA12511 | AFV BOARD ASSY | | |
| IC1 | FU-NSZBA0SP3005 | IC AUDIO PROCESSOR | | |
| D2 | FU-NDTZ01N4148M | SWITCHING DIODE | | |
| C1 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C4 | FU-CHD1JJ3CH560 | CHIP CERAMIC CAP. | CH J 56PF/50V | |
| C5 | FU-CHD1JJ3CH220 | CHIP CERAMIC CAP. | CH J 22PF/50V | |
| C6 | FU-CHD1JJ3CH560 | CHIP CERAMIC CAP. | CH J 56PF/50V | |
| C7 | FU-CHD1JC3CH3R0 | CHIP CERAMIC CAP. | CH C 3PF/50V | |
| C8 | FU-CHD1JC3CH3R0 | CHIP CERAMIC CAP. | CH C 3PF/50V | |
| C11 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C12 | FU-CE1CMASSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C13 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C14 | FU-CHD1JK30B103 | CHIP CERAMIC CAP. | B K 0.01UF/50V | |
| C15 | FU-CE1CMASSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C16 | FU-CE1CMASSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C17 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C19 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C20 | FU-CE1JMASSL3R3 | ELECTROLYTIC CAP. | 3.3UF/50V M H7 | |
| C21 | FU-CHD1JZ30F104 | CHIP CERAMIC CAP. | F Z 0.1UF/50V | |
| C22 | FU-CE1CMASSL100 | ELECTROLYTIC CAP. | 10UF/16V M H7 | |
| C23 | FU-CHD1AZ30F474 | CHIP CERAMIC CAP. | F Z 0.47UF/10V | |
| C24 | FU-CE1JMASSLR22 | ELECTROLYTIC CAP. | 0.22UF/50V M H7 | |
| R1 | FU-RRXAJR5Z0102 | CHIP RES. | 1/10W J 1K Ω | |
| R2 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R4 | FU-RRXAJR5Z0124 | CHIP RES. | 1/10W J 120K Ω | |
| R5 | FU-RRXAZR5Z0000 | CHIP RES. | 1/10W 0 Ω | |
| R7 | FU-RRXAJR5Z0122 | CHIP RES. | 1/10W J 1.2K Ω | |
| L1 | FU-LLAXKATTU100 | INDUCTOR | | |
| L3 | FU-LLAXKATTU180 | INDUCTOR | | |
| L4 | FU-LLAXKATTU100 | INDUCTOR | | |
| CN1 | FU-JTED009ER045 | ANGLE PIN HEADER 9P | | |
| X1 | FU-FXD186LLN001 | XTAL | 18.432MHZ | |

# Packing materials and accessories parts list

Block No. M3MM



# Packing and accessories

Block No. [M][3][M][M]

| ⚠ Symbol No. | Part No. | Part Name | Description | Local |
|---|---|---|---|---|
| 1 | FU-1VM321586 | GIFT BOX CARTON | | |
| 2 | FU-0VM204516 | STYROFOAM | four in one | |
| 3 | FU-0VM406453B | UNIT BAG | | |
| 4 | FU-NA985ED | REMOTE CONTROL UNIT | | |
| 5 | --------- | DRY BATTERY | R6TYPE | |
| 6 | FU-WPZ0122LG001 | RF CORD PAL 1.2M | | |
| 7 | FU-0VM416059 | ACCESSORY BAG | | |
| ⚠ 8 | FU-1VMN21426 | INST BOOK(FR) | | |

JVC

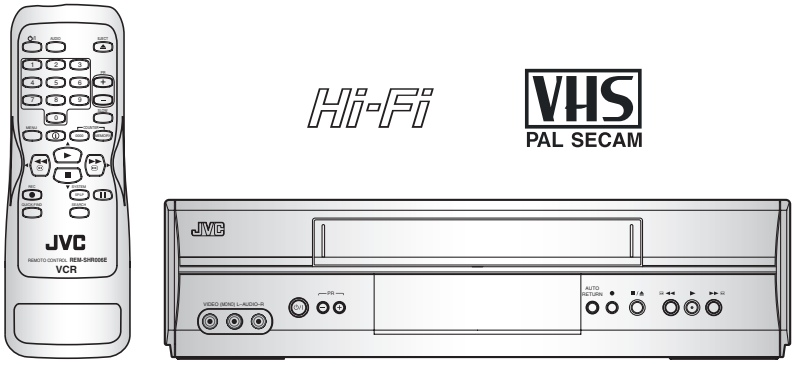
# SCHEMATIC DIAGRAMS

## VIDEO CASSETTE RECORDER

# HR-V525SEF

**CD-ROM No.SML200512**

| **Area Suffix** |
| --- |
| EF -------- French Republic |




HR-V525SEF [V18D1]

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**No.YD088SCH**
**2005/12**

# SCHEMATIC DIAGRAMS / CBA' S AND TEST POINTS

## Standard Notes

### WARNING

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

### Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in uF ($P=10^{-6}$ uF).
5. All voltages are DC voltages unless otherwise specified.
6. Electrical parts such as capacitors, connectors, diodes, IC's, transistors, resistors, switches, and fuses are identified by four digits. The first two digits are not shown for each component. In each block of the diagram, there is a note such as shown below to indicate these abbreviated two digits.



## LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

### 1. CAUTION:

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.

### 2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

### 3. Note:

1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

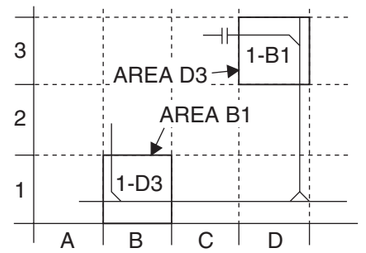
### 4. Mode: SP/REC

### 5. Voltage indications for PLAY and REC mode on the schematics are as shown below:

### 6. How to read converged lines

1-D3
- Distinction Area
- Line Number
- (1 to 3 digits)

Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".




### 7. Test Point Information

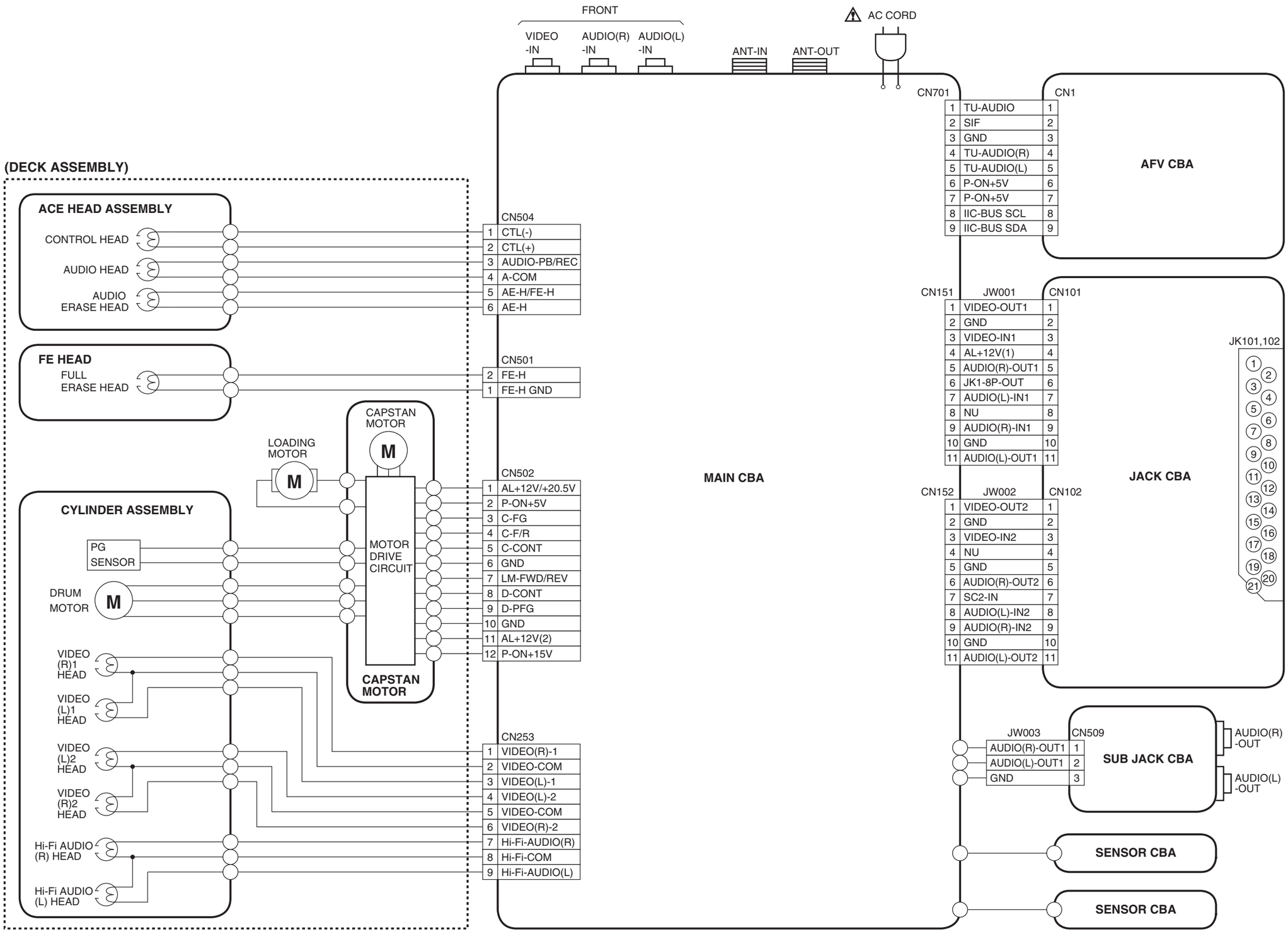
: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

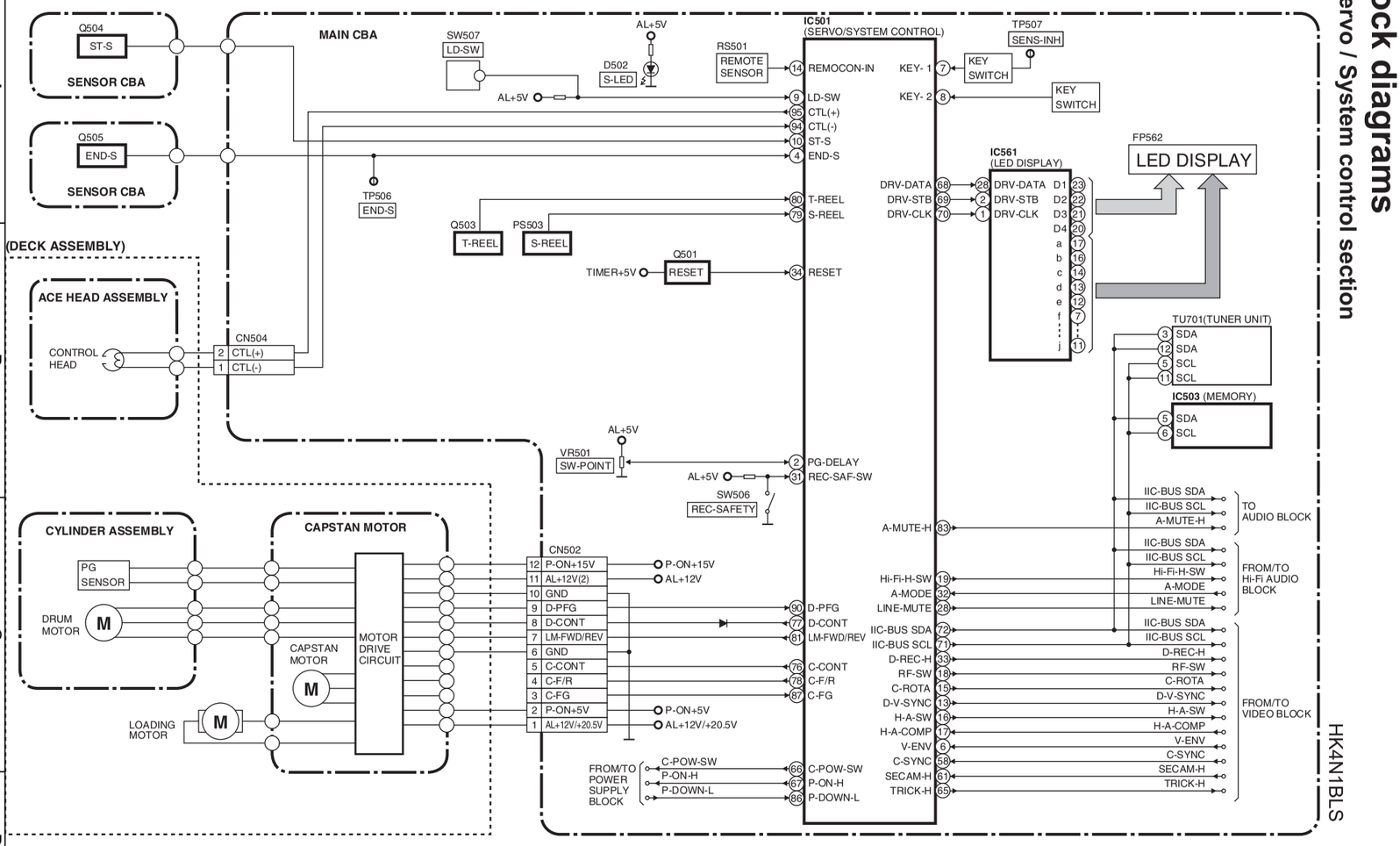
: Used to indicate a test point with a test pin.

# Wiring diagram

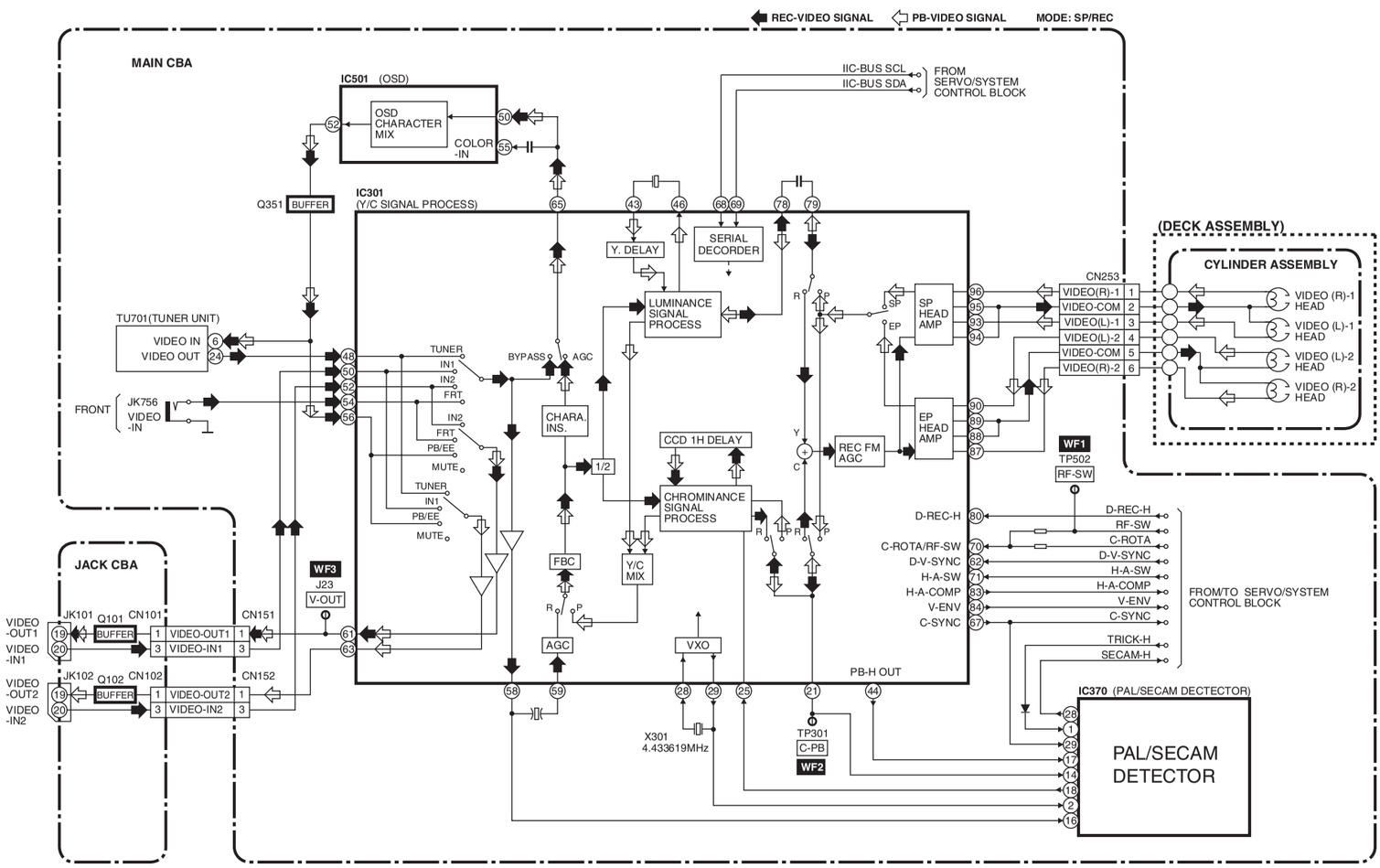


# Block diagrams

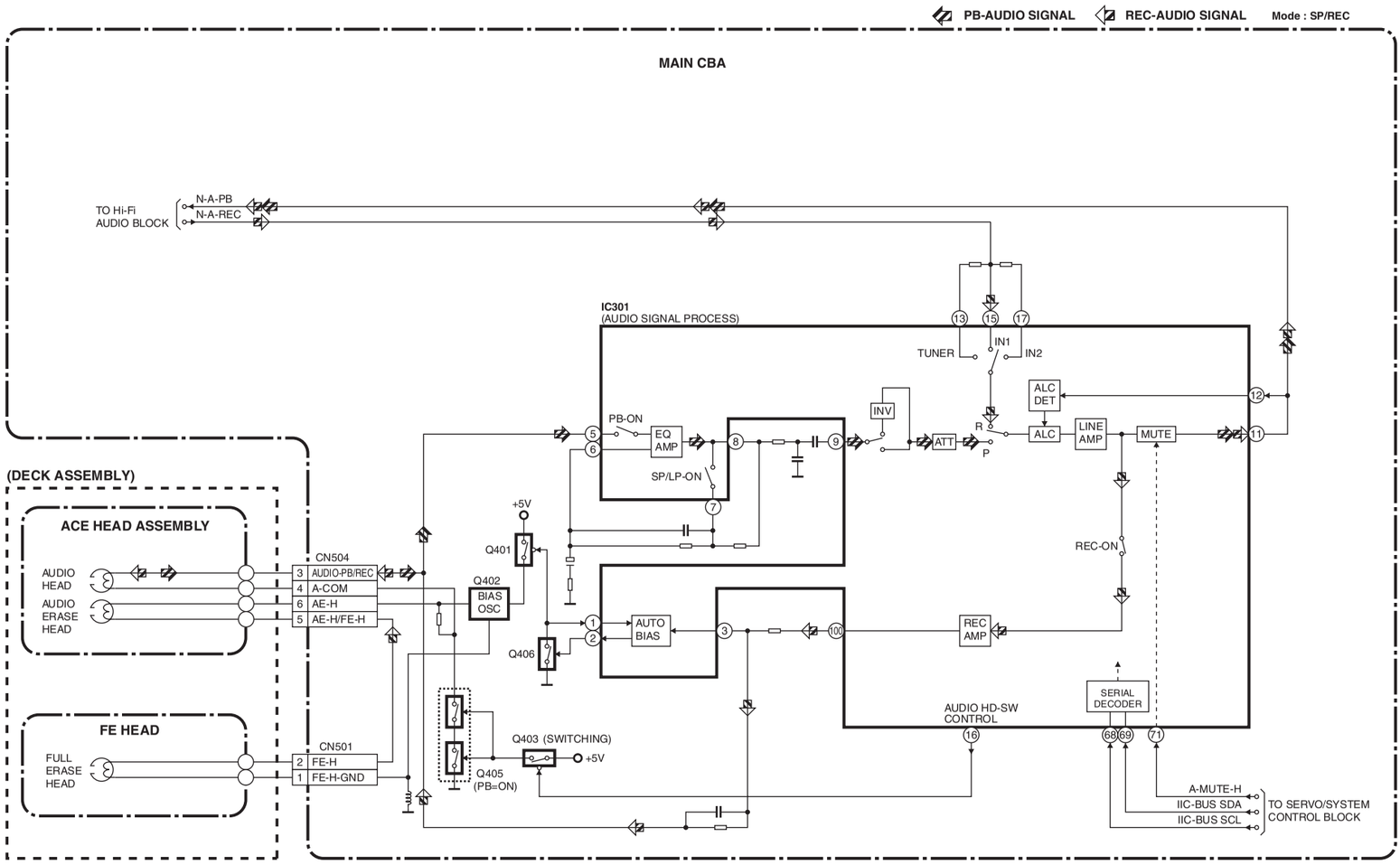
## ■ Servo / System control section



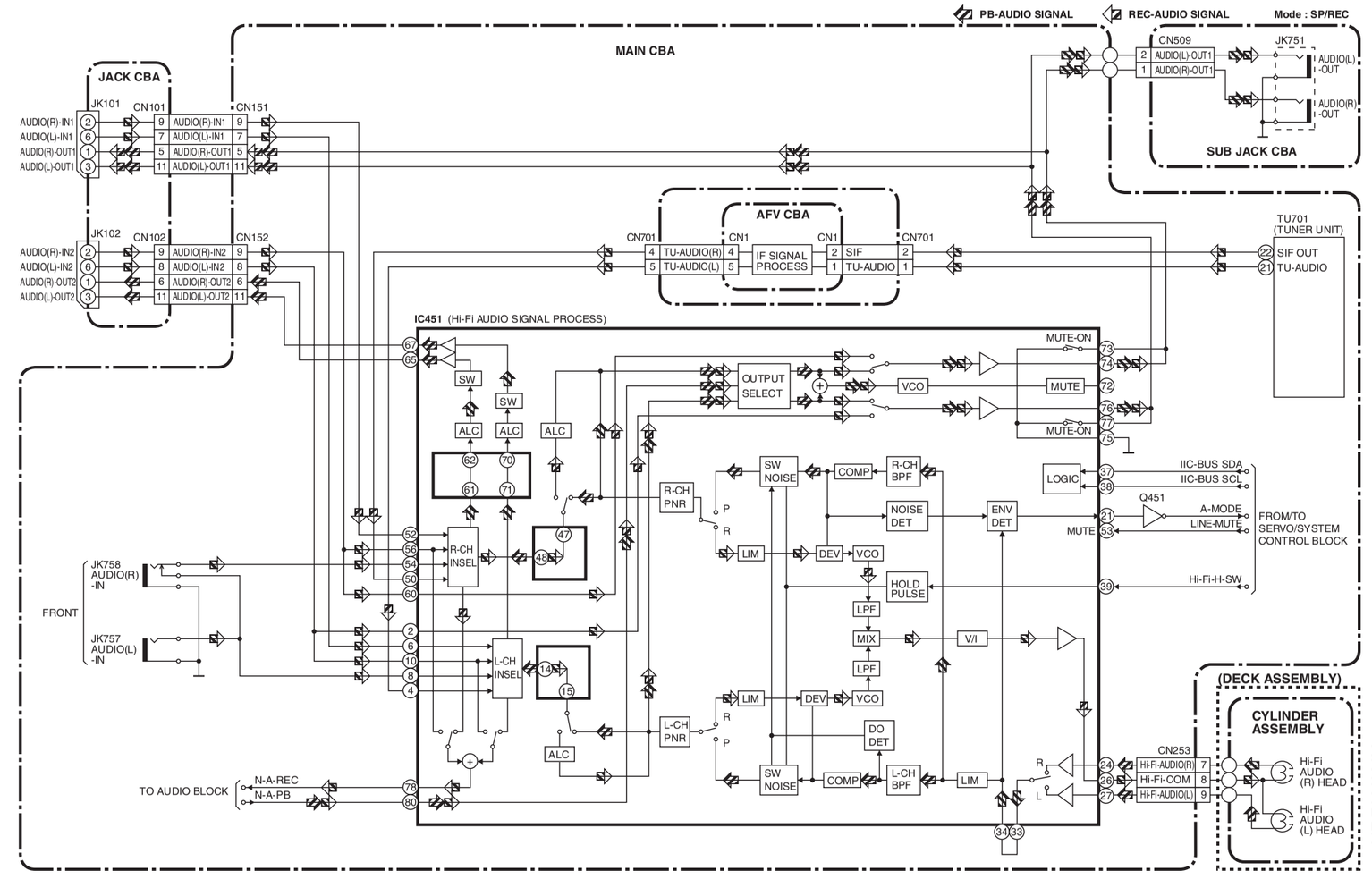

## ■ Video section



## ■ Audio section



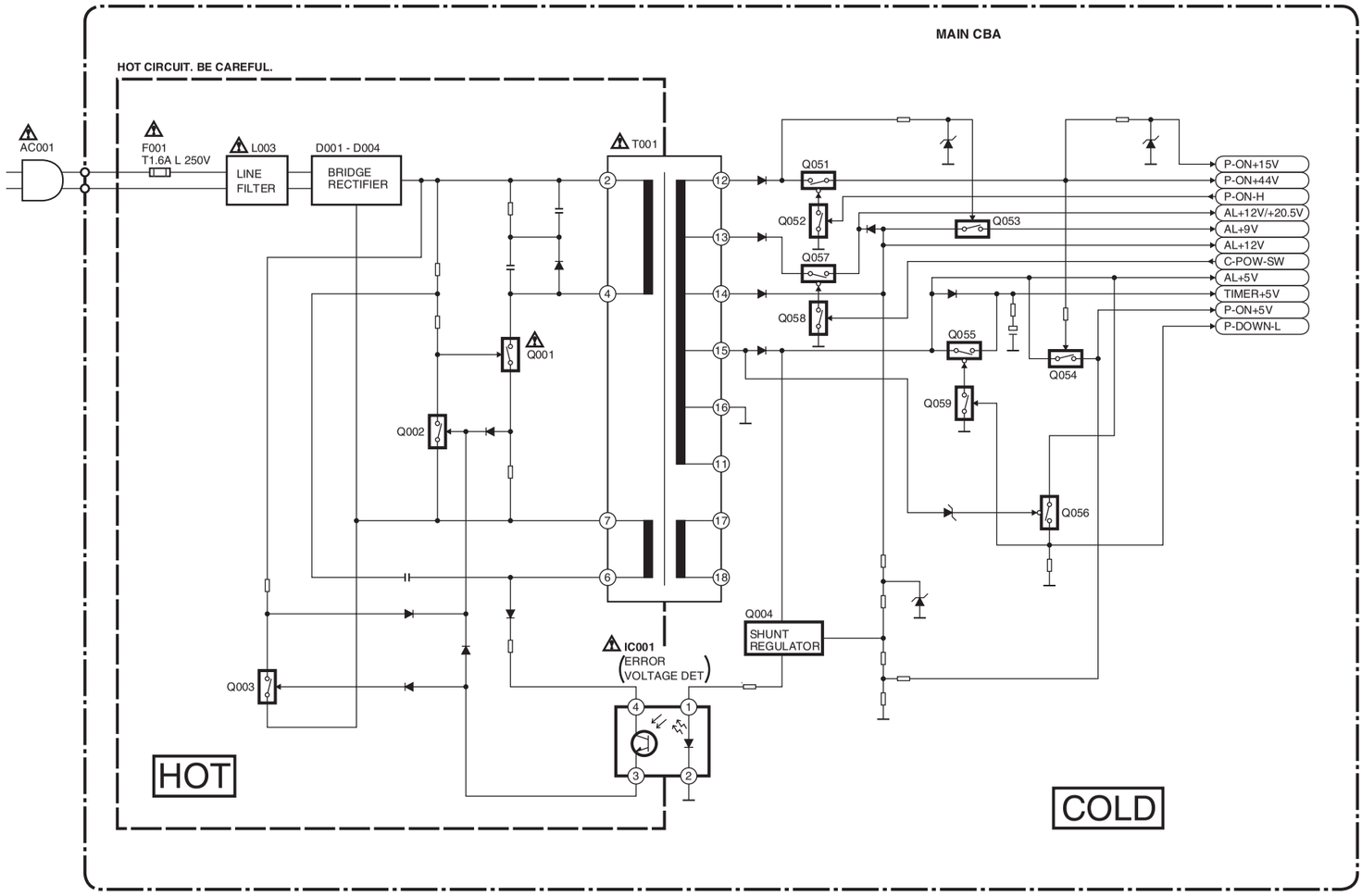

## ■ Hi-Fi Audio section



**CAUTION !**
For continued protection against fire hazard, replace only with the same type fuse.

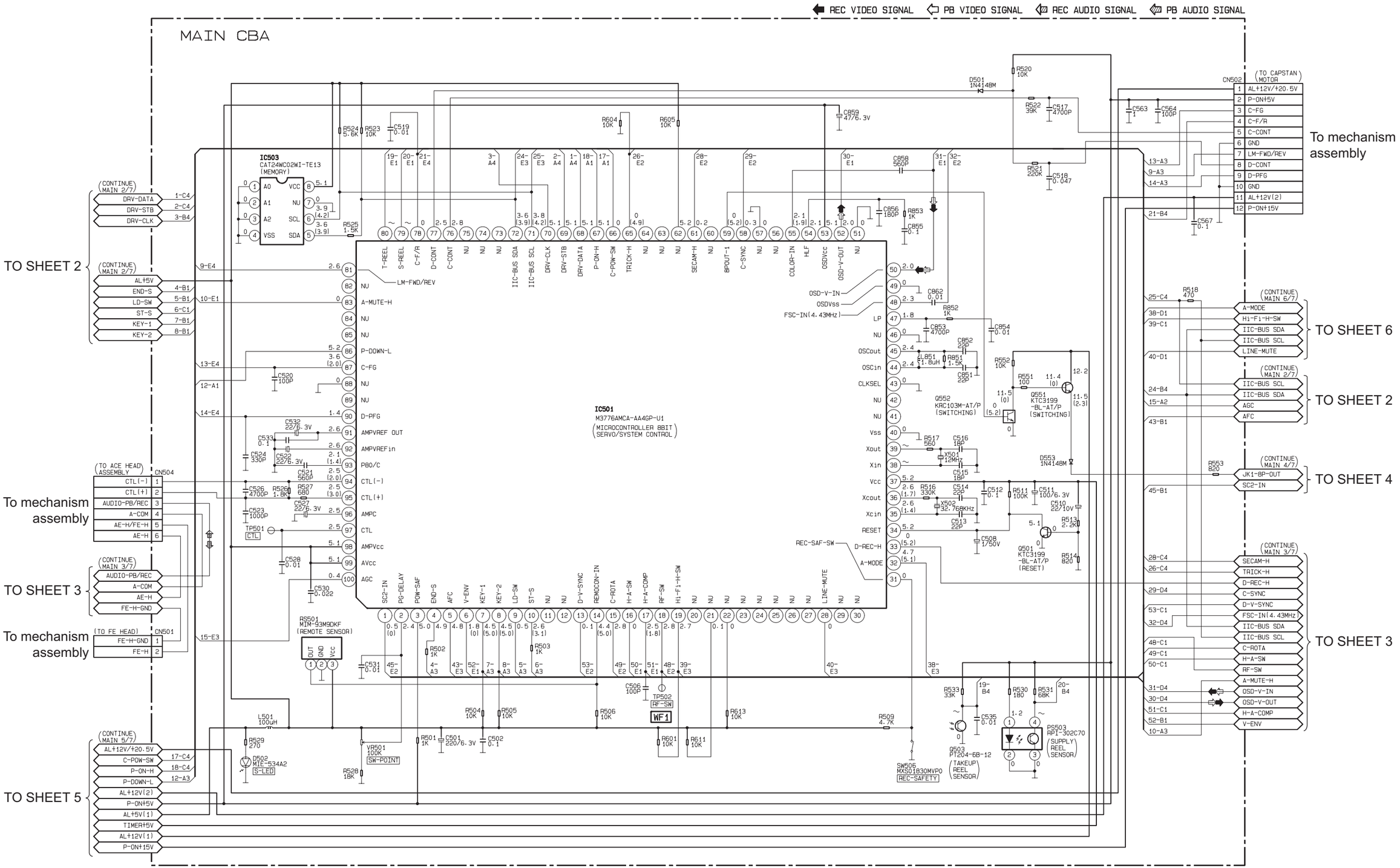
**NOTE:**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

**CAUTION !**
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



# Standard schematic diagrams

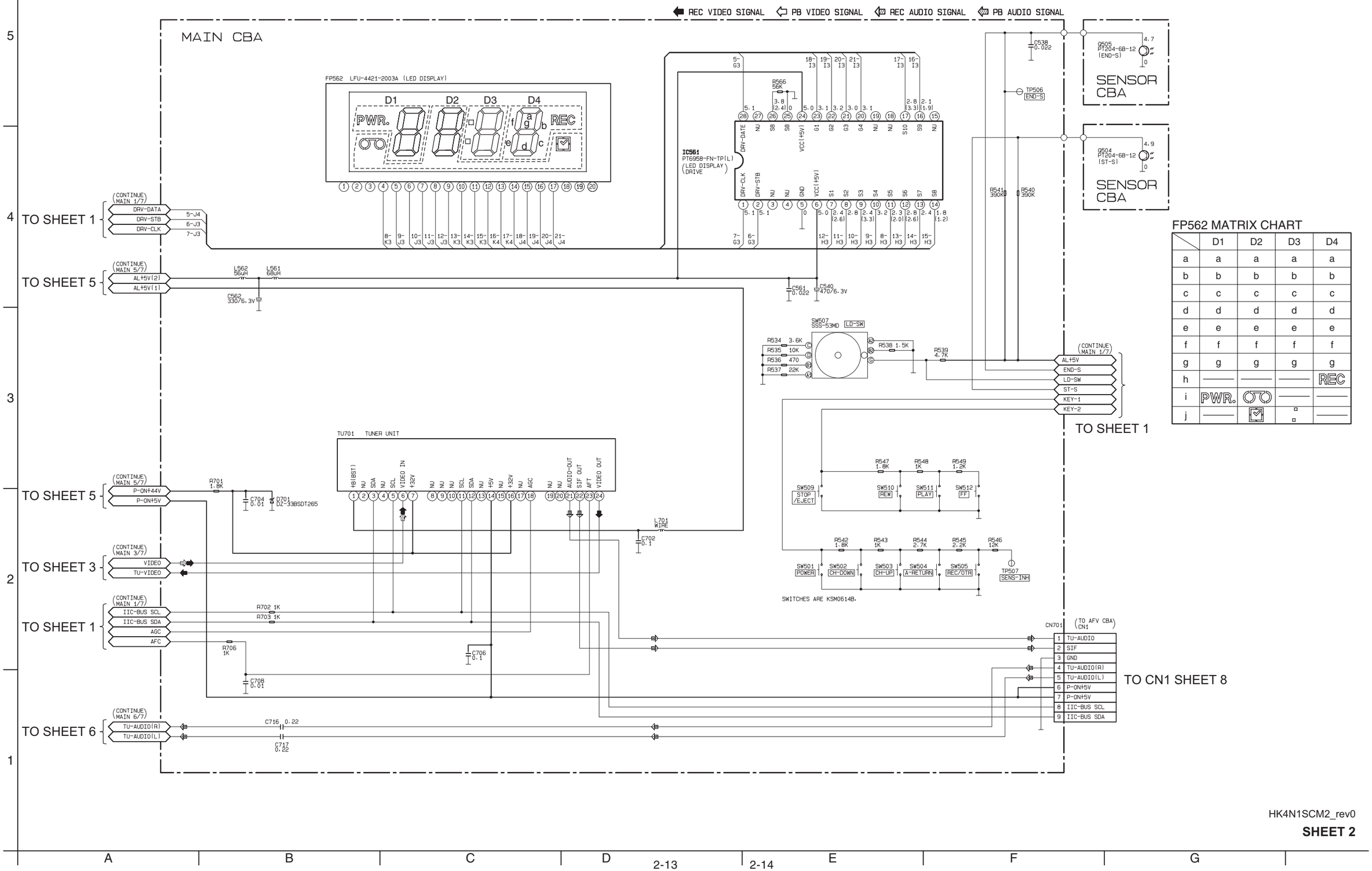
## ■ Main 1/7 section




HK4N1SCM1_rev0

**SHEET 1**

## ■ Main 2/7 & Sensor section



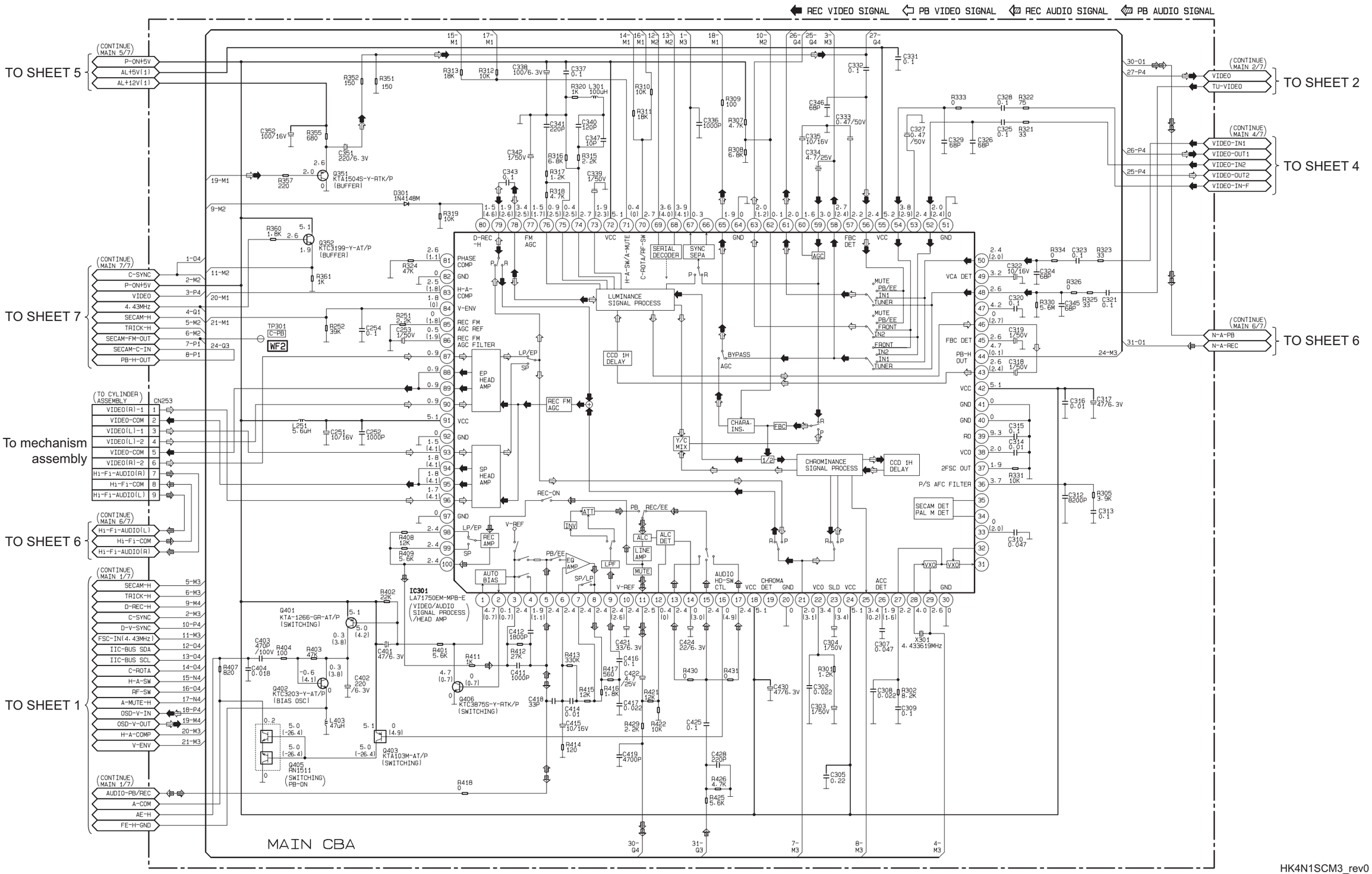

### FP562 MATRIX CHART

| | D1 | D2 | D3 | D4 |
|---|---|---|---|---|
| a | a | a | a | a |
| b | b | b | b | b |
| c | c | c | c | c |
| d | d | d | d | d |
| e | e | e | e | e |
| f | f | f | f | f |
| g | g | g | g | g |
| h | —— | —— | —— | REC |
| i | PWR. | ◯◯ | —— | —— |
| j | —— | ☑ | ▫ ▫ | —— |

HK4N1SCM2_rev0

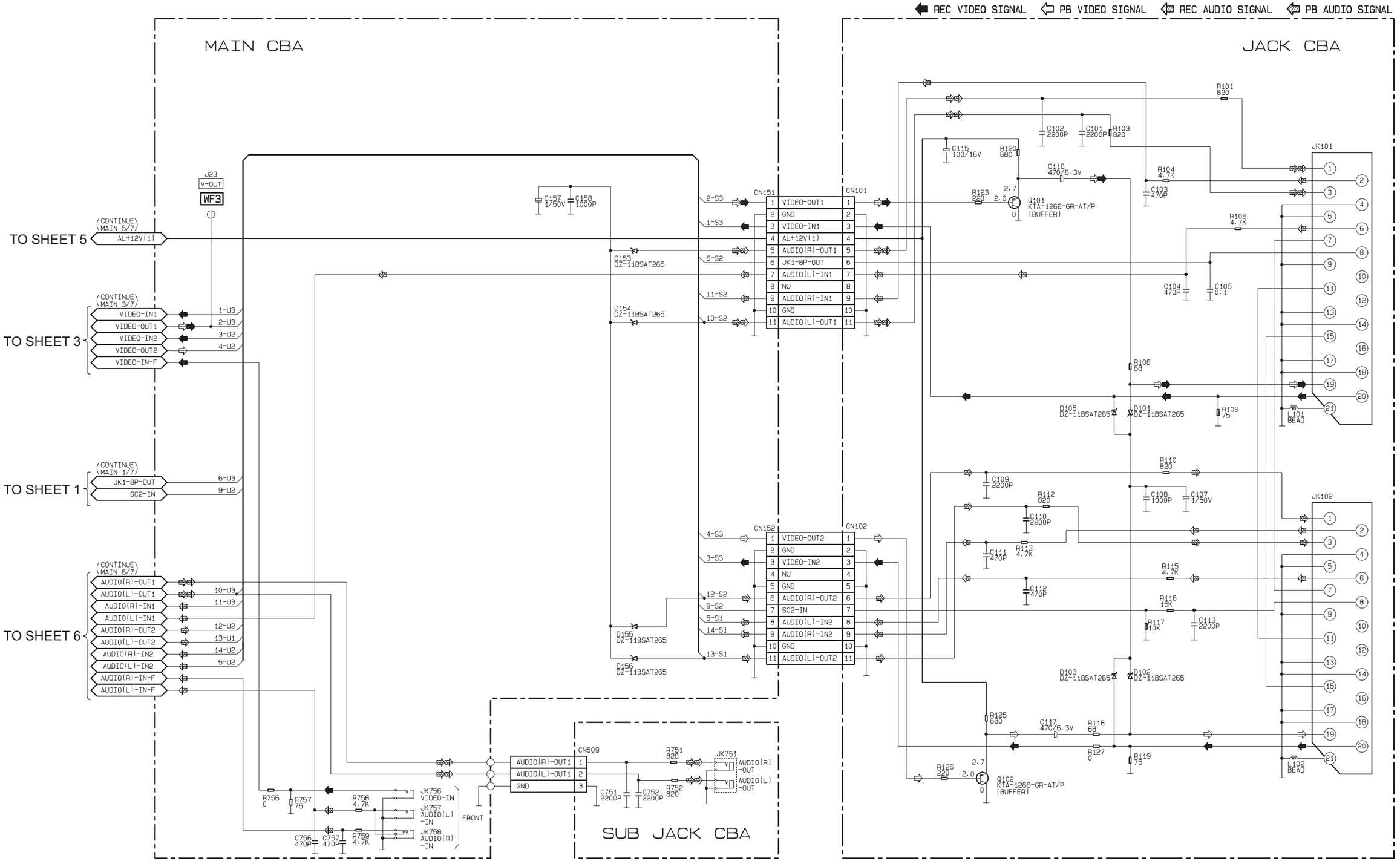
**SHEET 2**

## ■ Main 3/7 section




**SHEET 3**

## ■ Main 4/7, Jack & Sub jack section




HK4N1SCM4_rev0

**SHEET 4**

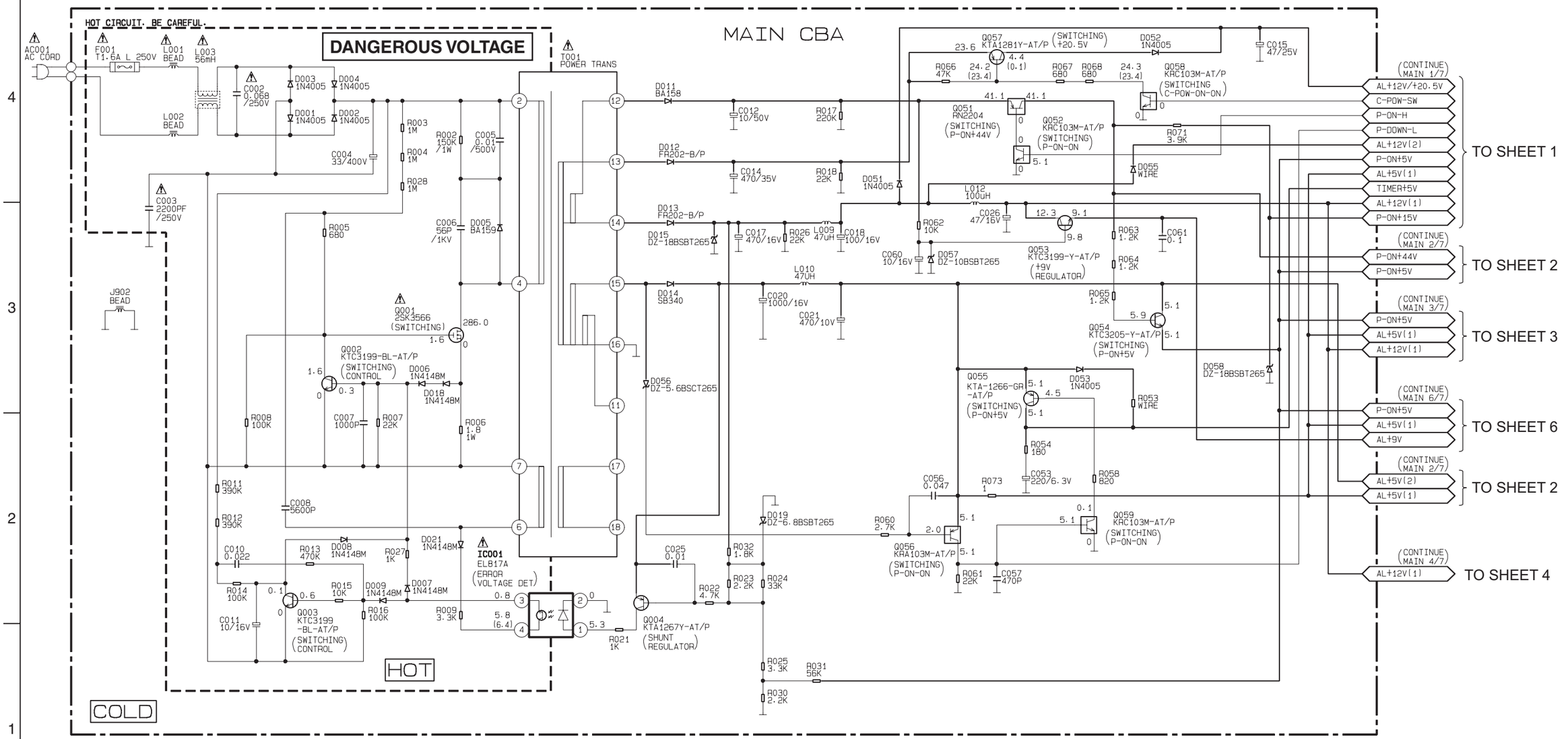
## ■ Main 5/7 section

**CAUTION !**
For continued protection against fire hazard, replace only with the same type fuse.

**NOTE:**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

⚠ Parts are safety assurance parts. When replacing those parts make sure to use the specified one.

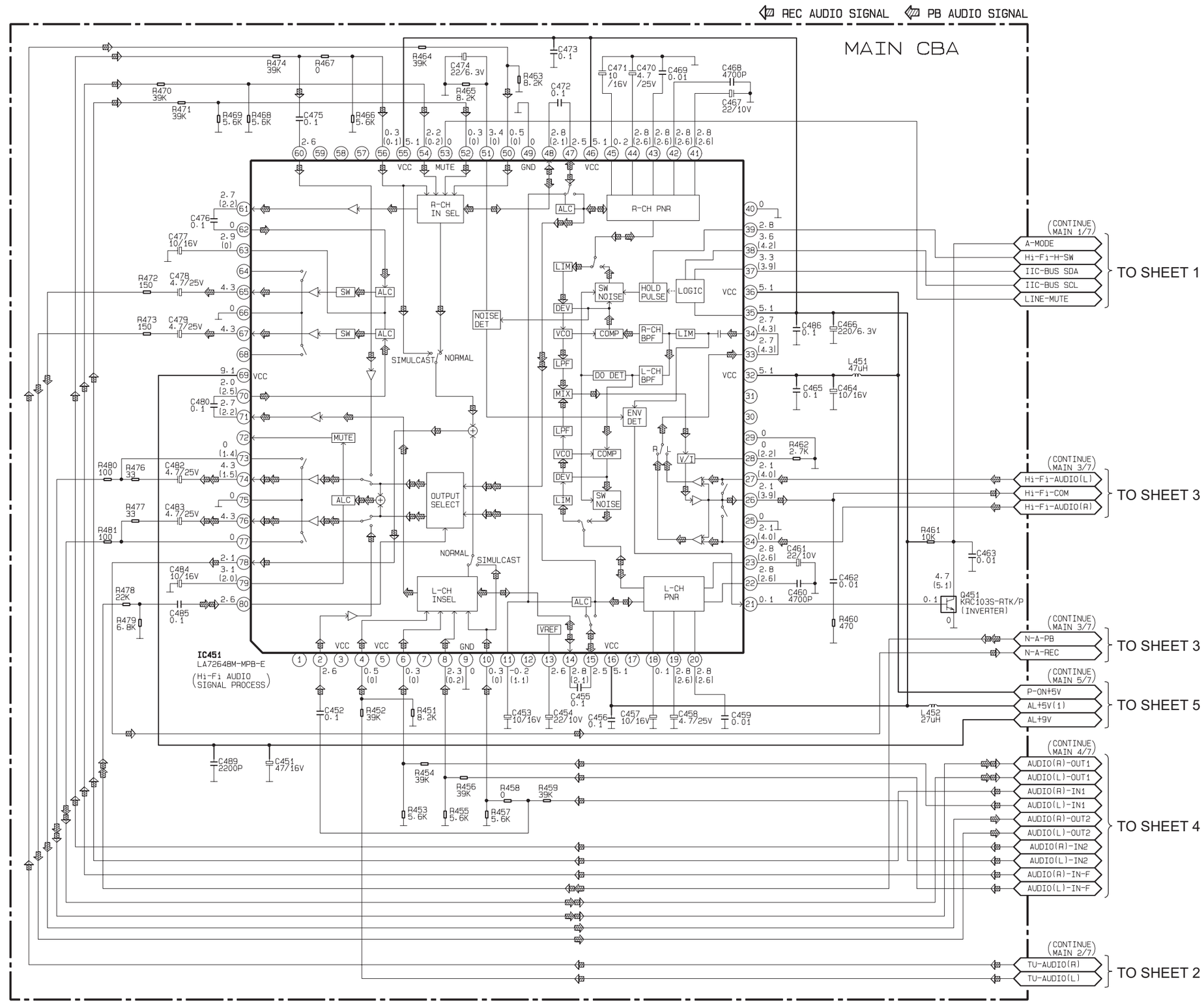
**CAUTION !**
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.




HK4N1SCM5_rev0

**SHEET 5**

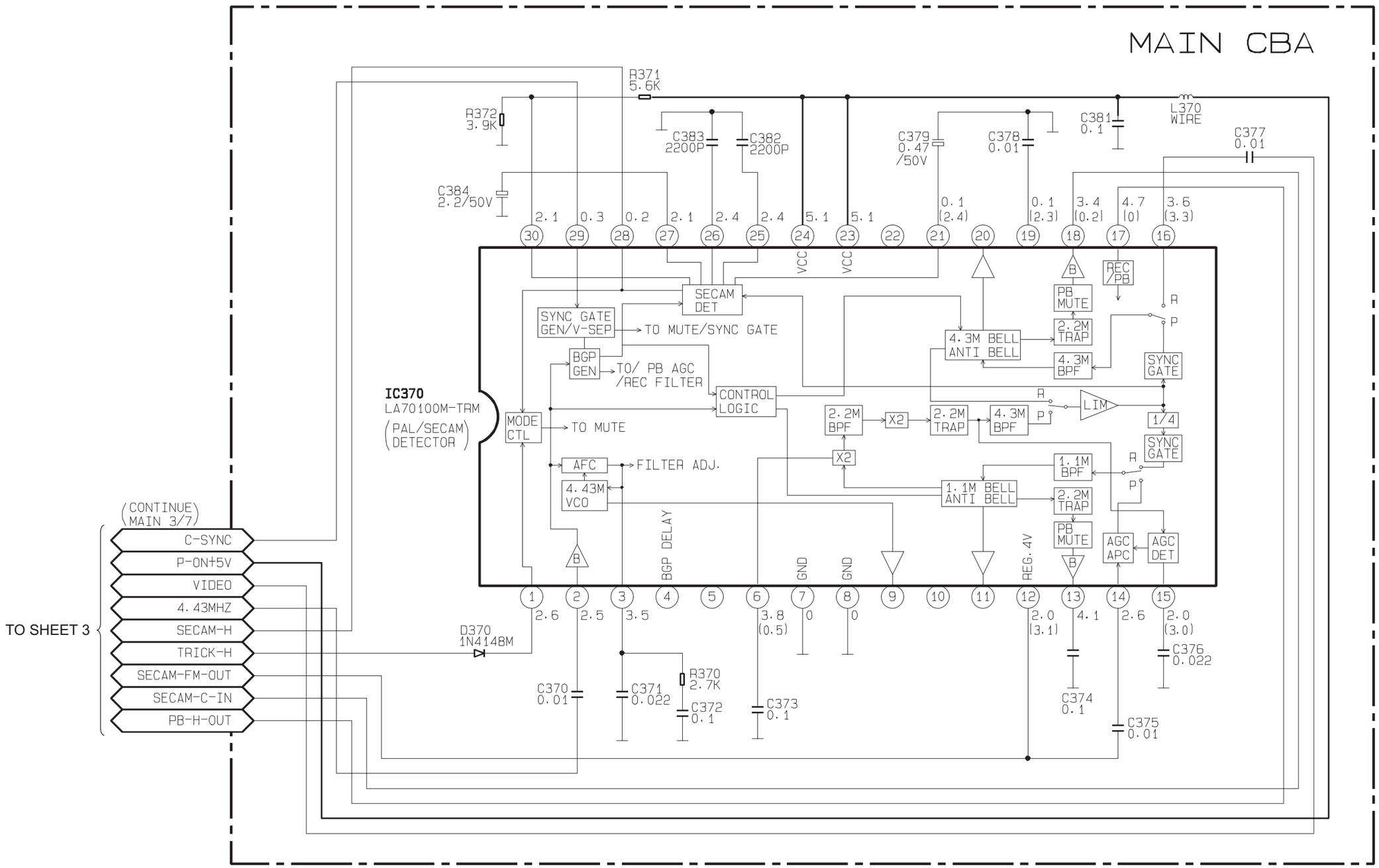
## ■ Main 6/7 section




HK4N1SCM6_rev0

**SHEET 6**

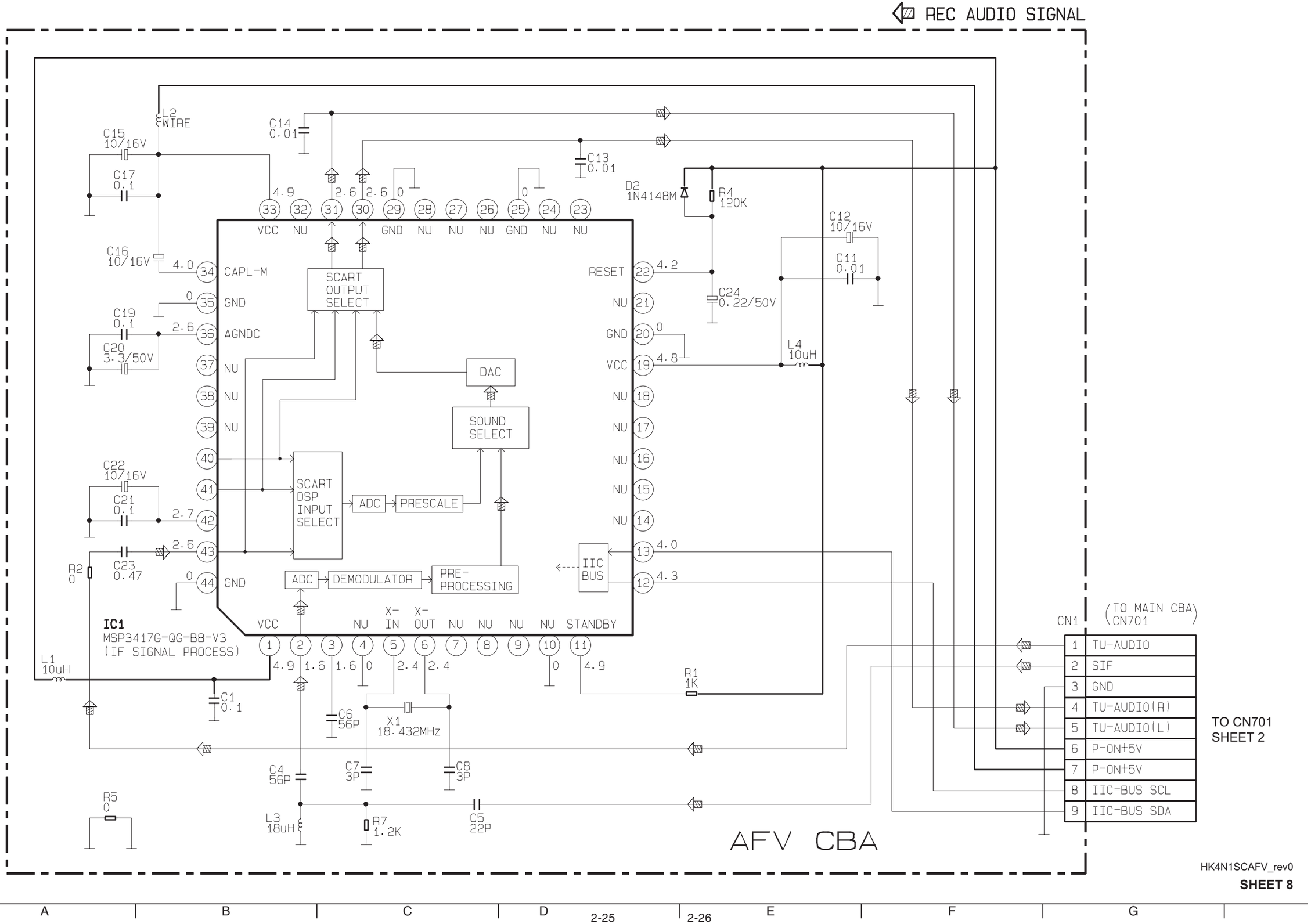
## ■ Main 7/7 section




HK4N1SCM7_rev0

**SHEET 7**

## ■ AFV section


REC AUDIO SIGNAL
L2 WIRE
C15 10/16V
C17 0.1
C14 0.01
C13 0.01
D2 1N4148M
R4 120K
C12 10/16V
C11 0.01
C24 0.22/50V
L4 10uH
C16 10/16V
C19 0.1
C20 3.3/50V
C22 10/16V
C21 0.1
R2 0
C23 0.47
R5 0
L1 10uH
C1 0.1
C6 56P
X1 18.432MHz
C4 56P
C7 3P
C8 3P
C5 22P
L3 18uH
R7 1.2K
R1 1K
33 VCC 4.9
32 NU
31 2.6
30 2.6
29 GND 0
28 NU
27 NU
26 NU
25 GND 0
24 NU
23 NU
34 CAPL-M 4.0
35 GND 0
36 AGNDC 2.6
37 NU
38 NU
39 NU
40
41
42 2.7
43 2.6
44 GND 0
SCART OUTPUT SELECT
DAC
SOUND SELECT
SCART DSP INPUT SELECT
ADC
PRESCALE
ADC
DEMODULATOR
PRE-PROCESSING
IIC BUS
22 RESET 4.2
21 NU
20 GND 0
19 VCC 4.8
18 NU
17 NU
16 NU
15 NU
14 NU
13 4.0
12 4.3
IC1
MSP3417G-QG-B8-V3
(IF SIGNAL PROCESS)
1 VCC 4.9
2 1.6
3 1.6
4 NU 0
5 X-IN 2.4
6 X-OUT 2.4
7 NU
8 NU
9 NU
10 NU 0
11 STANDBY 4.9
CN1
(TO MAIN CBA CN701)
1 TU-AUDIO
2 SIF
3 GND
4 TU-AUDIO(R)
5 TU-AUDIO(L)
6 P-ON+5V
7 P-ON+5V
8 IIC-BUS SCL
9 IIC-BUS SDA
TO CN701 SHEET 2
AFV CBA
HK4N1SCAFV_rev0
SHEET 8

# Printed circuit boards

## ■ Main board (Forward side) <01>

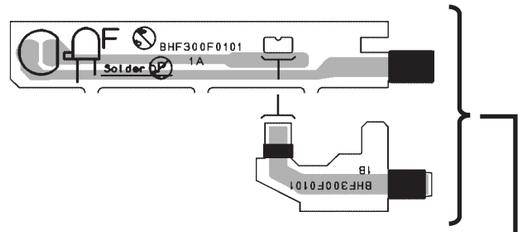
**CAUTION !**
For continued protection against fire hazard, replace only with the same type fuse.

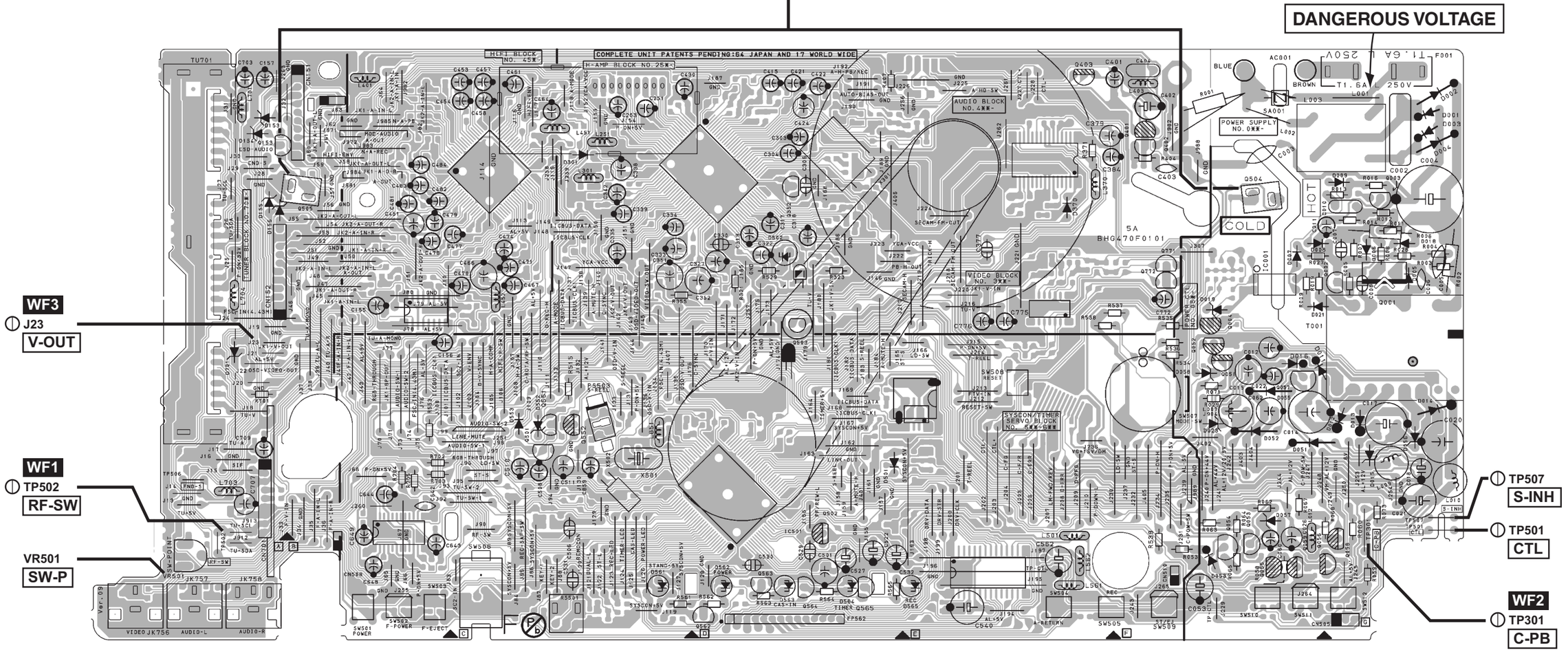
**NOTE:**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

**CAUTION !**
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

**Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.**

## ■ Sensor board (Forward side) <01>



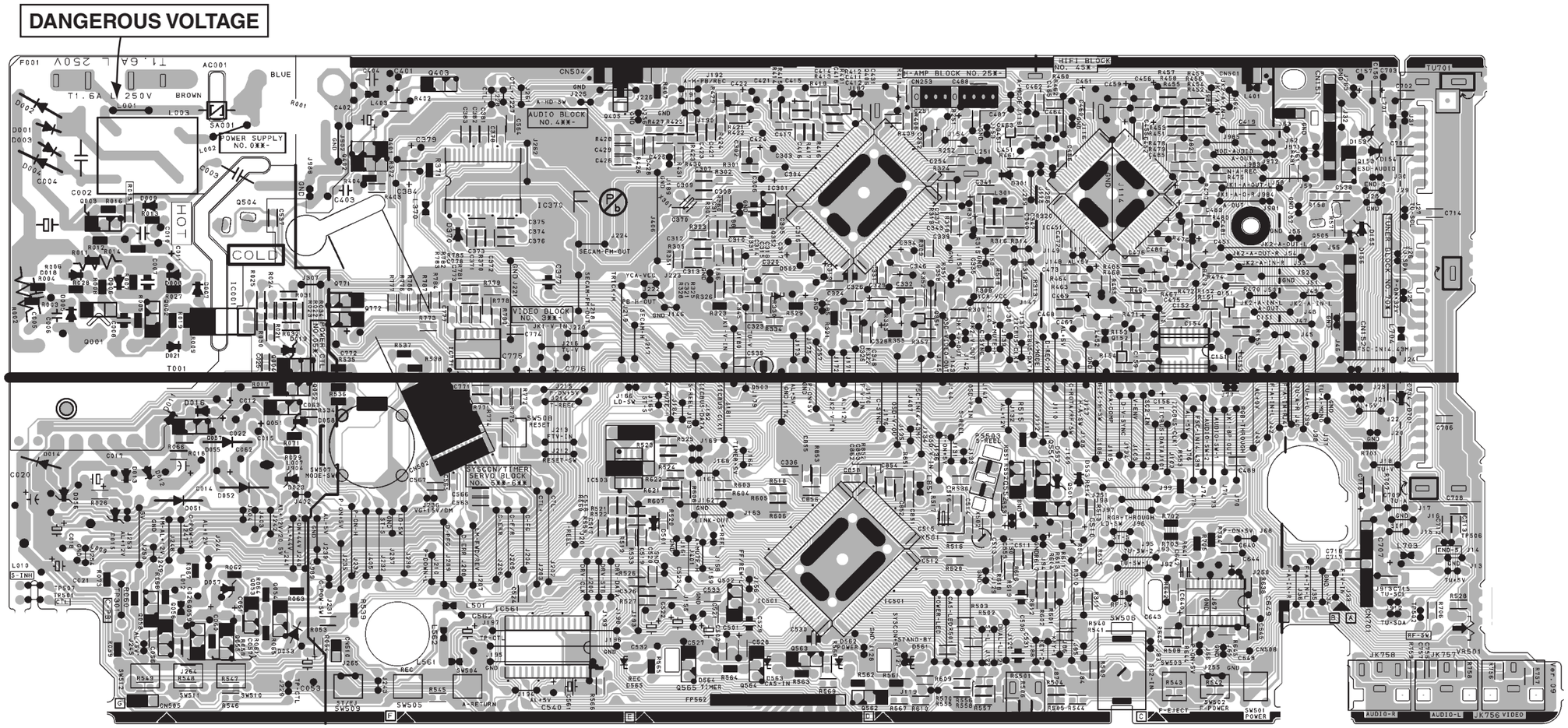
## ■ Main board (Reverse side) <01>

**CAUTION !**
For continued protection against fire hazard, replace only with the same type fuse.

**NOTE:**
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

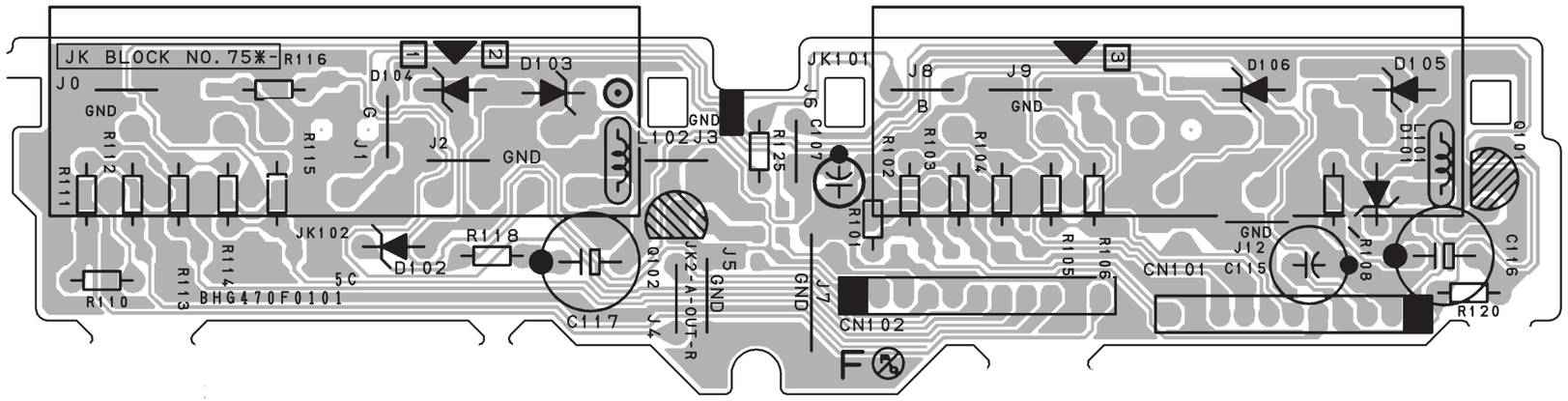
**CAUTION !**
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

**Because a hot chassis ground is present in the power supply circut, an isolation transformer must be used. Also, in order to have the ability to increase the input slowly, when troubleshooting this type power supply circuit, a variable isolation transformer is required.**

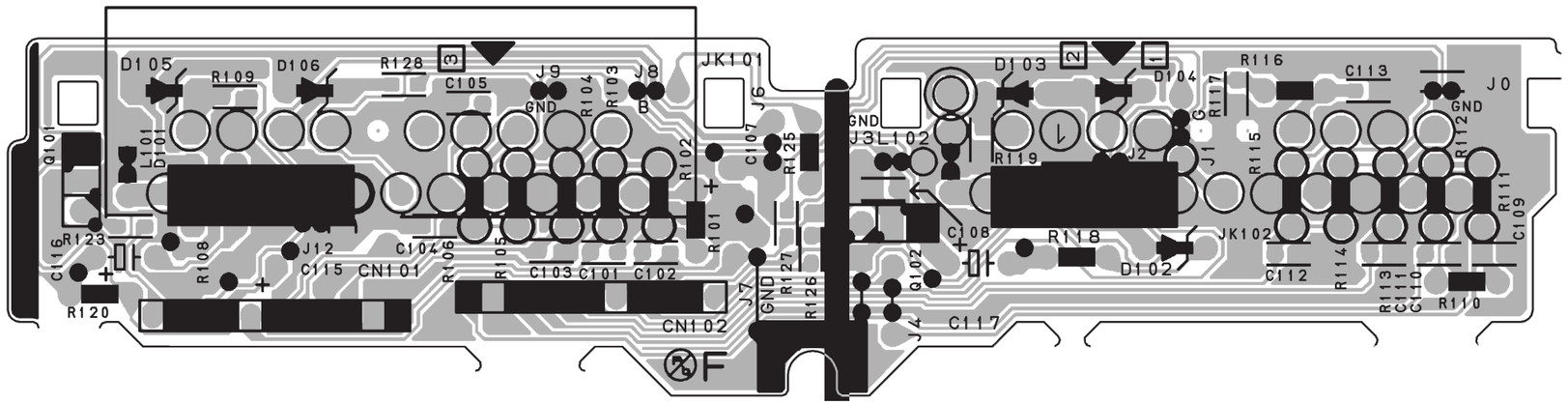


## ■ Jack board <01>

Forward side

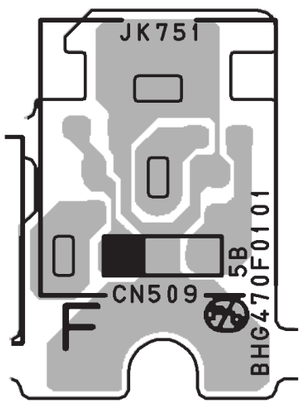



Reverse side

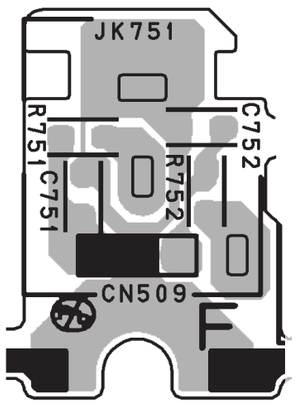



## ■ Sub jack board <01>

Forward side

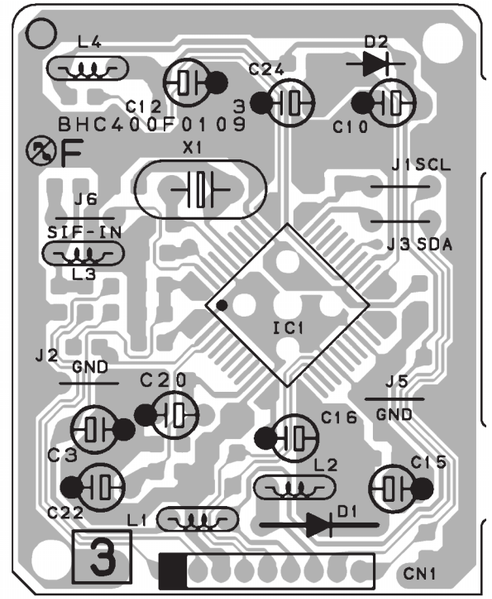



Reverse side

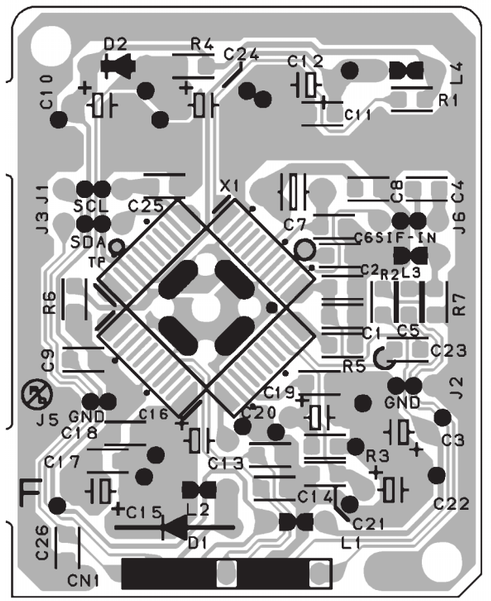



## ■ AFV board <02>

Forward side




Reverse side

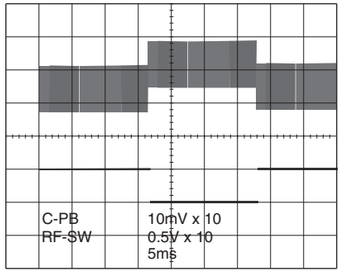


# Wave forms

**NOTE:**
Input
VCR: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL)
(WF1~WF3)

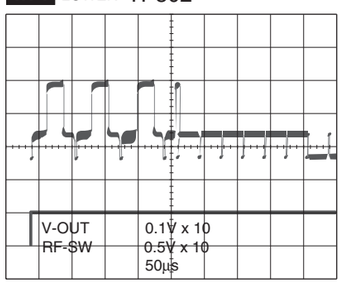
**WF2** UPPER TP301

**WF1** LOWER TP502

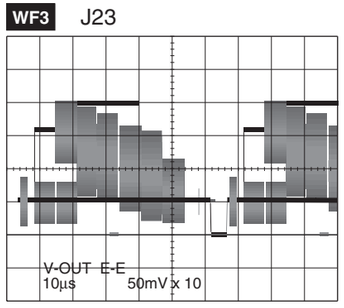



**WF3** UPPER J23

**WF1** LOWER TP502




**WF3** J23




U29.5PWF

JVC

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